

# **EROSION & SEDIMENT CONTROL FOR STREAM AND WETLAND MITIGATION BANKS AND NUTRIENT-REDUCING STREAM RESTORATION PROJECTS**

## **2020 ANNUAL STANDARDS AND SPECIFICATIONS**

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## **I. Introduction**

This document is being submitted pursuant to §62.1-44.15:55 Section E of the Virginia Erosion and Sediment Control Program (VESCP). This law allows proponents of wetland and stream mitigation banks and nutrient-reducing stream restoration projects (hereinafter collectively referred to as “wetland banks and stream restoration projects”) working in multiple jurisdictions, to file general erosion and sediment control specifications with the State Water Control Board as described below:

*E. Any person engaging, in more than one jurisdiction, in the creation and operation of a wetland mitigation or stream restoration bank or banks, which have been approved and are operated in accordance with applicable federal and state guidance, laws, or regulations for the establishment, use, and operation of (i) wetlands mitigation or stream restoration banks, pursuant to a mitigation banking instrument signed by the Department of Environmental Quality, the Marine Resources Commission, or the U.S. Army Corps of Engineers, or (ii) a stream restoration project for purposes of reducing nutrients or sediment entering state waters may, at the option of that person, file general erosion and sediment control standards and specifications for wetland mitigation or stream restoration banks annually with the Department for review and approval consistent with guidelines established by the Board.*

*The Department shall have 60 days in which to approve the specifications. If no action is taken by the Department within 60 days, the specifications shall be deemed approved. Individual approval of separate projects under this subsection is not necessary when approved specifications are implemented through a project-specific erosion and sediment control plan. Projects not included in this subsection shall comply with the requirements of the appropriate local erosion and sediment control program. The Board shall have the authority to enforce approved specifications and charge fees equal to the lower of (i) \$1,000 or (ii) an amount sufficient to cover the costs associated with standard and specification review and approval, projection inspections, and compliance. Approval of general erosion and sediment control specifications by the Department does not relieve the owner or operator from compliance with any other local ordinances and regulations including requirements to submit plans and obtain permits as may be required by such ordinances and regulations.*

Wetland banks and stream restoration projects are characterized as a type of land-disturbing activity, as defined in the VESCP. The VESCP defines a land-disturbing activity as any man-made change to the land surface that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands in the Commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land. Specifically, land-disturbing activities for the purposes of stream restoration or wetland banks are regulated by DEQ. ESC Specifications regarding these projects should address:

- Land-disturbing activities for both the creation, restoration, and enhancement of wetlands or streams providing credits per the banking instrument.
- Construction of access roads, staging areas, and borrow-spoil sites associated with the land-disturbance.

- Activities associated with maintaining streams such as the removal of invasive species in riparian buffers, repair of in-stream structures, re-grading of stream banks, and general maintenance of stream reaches.
- Activities associated with maintaining wetlands such as the removal of undesirable species, repair of berms, drains and other water control structures.
- If required or requested, Angler will submit self-inspection reports as well as complaint logs and complaint responses to DEQ.
- If required or requested, Angler will provide weekly e-reporting to the department's applicable regional office:
  - i. Inspection reports;
  - ii. Pictures;
  - iii. Complaint logs and complaint responses;
  - iv. Other compliance documents

## **II. Company Contact Information**

For information regarding this submission and Erosion and Sediment Control Specifications in general, please contact:

Ben Eubanks  
General Manager - Mid-Atlantic  
Angler Environmental, a RES Company  
1408 B Roseneath Road  
Richmond, VA 23230  
(804) 729-9120 (Phone)  
BEubanks@res.us

For information regarding E&S controls on a specific site or to schedule inspections, please contact:

Michael Peny, LA  
Regions Operations Director  
Construction Division Manager  
Angler Environmental, a RES Company  
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Warrenton, VA 20187  
(703) 393-4844 (Phone)  
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## **III. Company's ESC Obligations**

In addition to obligations under the Virginia Erosion and Sediment Control Law §62.1-44.15:51 et seq., Angler Environmental, a RES Company (Angler) is obligated to ensure self-inspection, reporting, training, certification, environmental protection and safety per the following:

- Angler will prepare an erosion and sediment control plan in accordance with the Erosion and Sediment Control regulations (9VAC25-840-70, as amended). A plan approval letter will be submitted in writing to the DEQ, stating the date of the approved plan and signed by the AS&S DEQ-Certified Program Administrator. Appendix P shows a sample plan approval letter on Angler letterhead.
- Any revisions to the erosion and sediment control plan within the Limits of Disturbance will be “redlined” on the plans and reviewed and approved by the DEQ Certified Inspector. These redline revisions include, but are not limited to, the addition of ESC BMPs to better manage site conditions and prevent any offsite impacts, adjusting the orientation of existing BMPs to ensure protection to adjacent properties, and reducing the limits of disturbance. All redlines will be documented in the SWPPP and on the plans.
- Any revisions to the erosion and sediment control plan that exceed the Limits of Disturbance will be reviewed and approved by the DEQ Certified Plan Reviewer prior to implementation. These revisions include, but are not limited to, rerouting access roads, additions of access roads, and the addition of storage/laydown yards. Modifications to applicable permits will be made if necessary. All revisions will be documented in the SWPPP and on the plans.
- Angler will obtain certifications required by the Erosion and Sediment Control and Stormwater Management Certification regulations (9VAC25-850-40, as amended.).
- Angler will provide for an inspection during or immediately following initial installation of erosion and sediment controls, at least once in every two-week period, within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds for all wetland banks and stream restoration projects (9VAC25-840-60). All inspections will be conducted by DEQ-Certified ESC inspectors (9VAC25-850-30).
- Angler will submit annual project tracking to the DEQ for all regulated land disturbing activities (9VAC25-870-170).
- Angler will submit e-notifications to DEQ two-weeks prior to the initiation of regulated land-disturbing activities. E-notifications will be sent to [StandardsandSpecs@deq.virginia.gov](mailto:StandardsandSpecs@deq.virginia.gov) and shall include the following information:
  - i. Project name or project number (any associated Construction General Permit #)
  - ii. Project location (including nearest intersection, latitude and longitude, access point(s))
  - iii. On-site project manager name and contact information
  - iv. Responsible Land Disturber (RLD) name and contact information
  - v. Project description
  - vi. Acreage of disturbance for the project
  - vii. Project start and end date
  - viii. Any project variances/waivers/exemptions
- Angler will serve as the plan reviewer and program administrator for Angler’s Annual Standard and Specifications. Angler ensures only qualified personnel that have taken State Water Control Board (Board)-approved training and met requisite eligibility-requirements and that are certified in accordance with the standards in 9VAC25-850-50 and as defined in 9VAC25-850-10, will act in the designated roles described more clearly below. Individuals that hold multiple certificates of competence may serve multiple roles concurrently. Angler may contract the identified roles to other entities but ensures persons acting in designated roles will have the requisite certifications.

- i. DEQ-Certified Erosion and Sediment Control Program Administrator: Person(s) responsible for implementing and enforcing Angler's Annual Standards and Specifications that holds a valid certificate of competence from the Board in the classification of program administrator in the area Erosion and Sediment Control.
  - ii. DEQ-Certified Erosion and Sediment Control Inspector: Person(s) responsible for conducting periodic examinations of Erosion and Sediment Control activities to ensure compliance with Angler's Annual Standards and Specifications and applicable laws and regulations that holds a valid certificate of competence from the Board in the classification of project inspector in the area of Erosion and Sediment Control.
  - iii. DEQ-Certified Erosion and Sediment Control Plan Reviewer: Person(s) responsible for reviewing and enforcing the Annual Standards and Specifications and applicable laws and regulations that holds a valid certificate of competence from the Board in the classification of plan reviewer in the area of Erosion and Sediment Control, or that is a licensed professional engineer, architect, certified landscape architect, or land surveyor (as defined in §54.1-400 et seq.), or that is a professional soil scientist (as defined in §54.1-2200 et seq.).
  - iv. DEQ-Certified Combined Administrator: Person(s) responsible for performing the combined role of program administrator, plan reviewer, and project inspector for Angler's Annual Standard and Specifications and all applicable laws and regulations that holds a certificate of competence from the board in the combined Erosion and Sediment Control classifications of program administrator, plan reviewer, and project inspector. This role must be held by an employee of Angler and cannot be contracted out.
  - v. Responsible Land Disturber (RLD): Person(s) responsible for conducting land-disturbing activity under Angler's Annual Standards and Specifications that holds a valid certificate issued by DEQ. Person(s) serving as the RLD will be identified on the e-notification to DEQ prior to the initiation of land-disturbing activities.
- Angler will document any field changes that occur by a certified inspector in the field log and in the Stormwater Pollution Prevention Plan. Periodic ESC and SWM Inspections should ensure compliance with these AS&S. Inspection reports should document onsite changes by noting issues of noncompliance. Corrective actions should be called out on inspection reports and include timeframes for completion.
  - Angler will obtain the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities for all wetland banks and stream restoration projects, when necessary. In accordance with permit regulations (9VAC25-880-70), Angler will also prepare a Stormwater Pollution Prevention Plan (SWPPP), which contains an Erosion and Sediment Control Plan, Stormwater Management Plan (when applicable), and a Pollution Prevention Plan.
  - Mitigation Banking Instrument (MBI), and the associated Bank Development Plan (BDP), which describe the establishment, use, operation, and maintenance of a specific mitigation bank by and between Angler (and/or its affiliate/subsidiary) and the Interagency Review Team (IRT), which may include the U.S. Army Corps of Engineers ("Corps"), the U.S. Environmental Protection Agency ("EPA"), the U.S. Fish and Wildlife Service ("FWS"), and the Virginia Department of Environmental Quality ("DEQ").
  - In addition to the above, the functional success of a stream restoration project depends on stream channel stability, functionality of in-stream structures, and the establishment of permanent vegetation, etc. Likewise, the functional success of a wetland mitigation bank project depends on stability of the soil, control of runoff/water pollution, establishment of vegetation etc. Therefore, Angler has a professional and financial obligation to inspect,

report, and correct any erosion and sediment control issues that arise on the site. In addition, Angler has specific protocols in place to provide the necessary training, obtain required certifications and provide for environmental protection, and safety.

- Angler, as the Annual Standards and Specifications holder, shall maintain, either on-site or in AS&S files, a copy of the approved plan and a record of inspections for each active land-disturbing activity.

#### **IV. ESC Standards and Specifications for Stream and Wetland Mitigation Banks and Nutrient-Reducing Stream Restoration Projects**

Angler will, at a minimum, meet the 19 “minimum standards” (Section 9VAC25-840-40) for ESC for all wetland banks and stream restoration projects through a combination of standard ESC practices, per 1992 Virginia Erosion and Sediment Control Handbook (VESCH) and DEQ’s Technical Bulletins and publications, as well as through the employment of ESC measures unique to the construction of stream restoration and wetland mitigation bank sites. However, stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels. Angler will incorporate updates and information in ESC Technical Bulletin #4 to implement standards and specifications 3.31, 3.32, 3.33, and 3.34 when applicable. Additionally, information and guidance from the DCR Native versus Invasive FAQ will be utilized for vegetative stabilization of land disturbing activities when applicable.

The following sections 1-4 describe the ESC practices Angler proposes for wetland bank and stream restoration project development. Sections 1-3 lists the standard ESC practices defined by the VESCH, selected variances and procedures, and proposed modifications. Section 4 describes proposed ESC practices not currently included in the VESCH. In sections 2 and 3, practices used for stream restoration wetland banks have been classified as one of two categories, either Primary or Secondary, based on implementation and intent of structural practice. Primary standards will be used as the principal measures for controlling erosion and sedimentation during wetland banks and stream restoration projects. Secondary standards are those that will be employed to provide additional downstream protection and to further ensure the intent of all minimum standards are met.

#### **1. List of Standard ESC Practices per VESCH**

Following is a list of all the VESCH Standards and Specifications that will typically be used during construction of the wetland banks and stream restoration projects.

##### Road Stabilization

- 3.02 Temporary Stone Construction Entrance
- 3.03 Construction Road Stabilization

##### Sediment Barriers

- 3.05 Silt Fence
- 3.06 Brush Barrier
- 3.08 Culvert Inlet Protection

##### Dikes and Diversions

- 3.09 Temporary Diversion Dike

- 3.12 Diversion<sup>1</sup>

Sediment Traps and Basins

- 3.13 Temporary Sediment Trap
- 3.14 Temporary Sediment Basin<sup>2</sup>

Waterway and Outlet Protection

- 3.18 Outlet Protection
- 3.19 Riprap
- 3.20 Rock Check Dams

Stream Protection

- 3.22 Vegetative Streambank Stabilization
- 3.23 Structural Streambank Stabilization
- 3.24 Temporary Vehicular Stream Crossing
- 3.25 Utility Stream Crossing
- 3.26 Dewatering Structure
- 3.27 Turbidity Curtain

Site Preparation for Vegetation Establishment

- 3.29 Surface Roughening
- 3.30 Topsoiling

Grass Establishment

- 3.31 Temporary Seeding<sup>3</sup>
- 3.32 Permanent Seeding<sup>3</sup>
- 3.33 Sodding
- 3.34 Bermudagrass and Zoysiagrass Establishment

Mulches

- 3.35 Mulching
- 3.36 Soil Stabilization Blankets and Matting

Other Vegetative Controls

- 3.37 Trees, Shrubs, Vines and Ground Covers
- 3.38 Tree Preservation and Protection

## **2. Variance Requests for ESC Practices currently in VESCH**

Whenever possible, the standard erosion and sediment control practices, listed in the previous section, will be utilized. However, since the construction process for wetland banks and stream restoration projects typically involves a unique set of circumstances, modification of these standard practices is often necessary. For instance, the construction of a wetland differs from most land development activities because wetland areas are meant to retain water rather than drain and dry out. Thus, some standard erosion and sediment control measures may not be necessary or desired, and the implementation of some of the standards and specifications will vary from standard practices. Accordingly, Angler will submit a variance request to DEQ for each stream restoration or wetland mitigation bank project requiring a variance.

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<sup>1</sup> This measure is typically only utilized for wetland mitigation bank projects.

<sup>2</sup> This measure is typically only utilized for stream restoration projects.

<sup>3</sup> For wetland mitigation bank projects; this applies to upland areas only. See Section 3 for Temporary Wetland Seeding Description.



Angler does not typically require variances during construction of stream restoration projects. If variances are required for stream restoration projects, Angler will submit a variance request to DEQ for each stream restoration bank project requiring a variance.

Angler routinely uses two variances of the Minimum Standard 6 (9VAC25-840-40) during the construction of wetland mitigation bank projects. These include deviations from Standard and Specification 3.05 (Silt Fence Variance) and Standard and Specification 3.13 (Temporary Sediment Trap Variance). Angler will submit a deviation request to DEQ on a project specific basis for wetland bank projects necessitating a deviation from these standard and specifications and/or other standards and specifications, as necessary.

All variance requests will include the following information, a project description, the minimum standard variance request, justification for the request including site conditions that necessitate the request and how the alternative practice meets the requirements of the minimum standards, and any necessary mitigation. DEQ must issue a variance approval letter for the alternative practice to become part of the erosion and sediment control plan for each specific project. The variance request will be accomplished with the submittal of Angler's variance request form. An example variance request form is included as Appendix N.

### **3. Other Modifications to ESC Practices currently in VESCH**

Whenever possible, the standard erosion and sediment control practices, listed in Section 1, will be utilized and are considered a primary standard; however, since the construction process for stream restoration projects typically involves a unique set of circumstances and work in environmentally sensitive areas, modification of certain standard practices is necessary. Similarly, some standard erosion and sediment control measures may need to be modified for wetland mitigation bank projects to accommodate the existing site conditions and the construction objectives of the project. The following is a list of modified erosion and sediment control practices currently in VESCH that are typically used in wetland banks and stream restoration projects and a description of how they meet Minimum Standards. Use of modified VESCH measures shall be installed with the intent of the VESCH specifications and per the manufacturer's instructions. Should non-VESCH control measures fail to effectively control soil erosion, sediment deposition, and non-agricultural runoff, then VESCH control measures shall be utilized.

#### **A. Temporary and Permanent Seeding - Standard & Specification 3.31/3.32**

Vegetative establishment, including both temporary and permanent herbaceous seeding, will be in accordance with the specifications provided in the BDP and Final Mitigation Plan, as approved by the IRT for bank projects, or the construction plan for nutrient-reducing stream restoration projects. These measures are utilized for wetland bank projects and as a primary control practice for stream restoration projects. Table 1 below lists the typical seed mix used for permanent seeding within bank stabilization areas and the riparian buffer zone of stream restoration projects. The mix includes a combination of both annual and perennial plants. Table 2 below lists the typical seed mix used for both temporary and permanent stabilization of wetland bank areas. The typical seed mix used for both temporary and permanent wetland seeding within the wetland cells includes a combination of annual and perennial plants. All other considerations and specifications will be in accordance with Std. & Spec. 3.31 and 3.32.

Table 1: Bank Stabilization and Riparian Buffer Planting Seed Selection

<b>STREAMBANK STABILIZATION SEED MIX*</b>			
<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>INDICATOR STATUS</b>	<b>PHYS. REGION</b>
<b>GRASSES - 90% OF TOTAL MIX</b>			
<i>Agrostis perennans</i>	Autumn Bentgrass	FACU	ACP/EMP
<i>Andropogon virginicus</i>	Broomsedge Bluestem	FAC	ACP
<i>Chasmanthium latifolium</i>	Indian Woodoats	FAC	ACP
<i>Dichanthelium clandestinum</i>	Deertongue	FACW	ACP
<i>Elymus hystrix</i>	Eastern Bottlebrush Grass	UPL	ACP
<i>Elymus riparius</i>	Riverbank Wildrye	FACW	ACP/EMP
<i>Elymus submuticus</i>	Virginia Wildrye	FAC	ACP/EMP
<i>Lolium perenne</i>	Perennial Ryegrass	FACU	ACP/EMP
<i>Panicum virgatum</i>	Switchgrass	FAC	ACP/EMP
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU	ACP/EMP
<i>Sorghastrum nutans</i>	Indian Grass	FACU	ACP/EMP
<i>Tridens flavus</i>	Purpletop	FACU	ACP/EMP
<i>Tripsacum dactyloides</i>	Eastern Gamagrass	FACW	EMP
<b>FORBS - 10% OF TOTAL MIX</b>			
<i>Bidens aristosa</i>	Bearded beggarticks	FACW	ACP/EMP
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU	ACP/EMP
<i>Cichorium intybus</i>	Chickory	FACU	ACP/EMP
<i>Coreopsis lanceolata</i>	Lanceleaf Tickseed	FACU	EMP
<i>Heliopsis helianthoides</i>	Smooth Oxeye	FACU	EMP
<i>Mimulus ringens</i>	Allegheny Monkeyflower	OBL	ACP/EMP
<i>Rudbeckia hirta</i>	Blackeyed Susan	FACU	ACP/EMP
<i>Symphyotrichum ericoides</i>	White Heath Aster	FACU	EMP

\*This is an all-inclusive list of potential streambank species seeds to be applied to disturbed riparian and streambank areas. Site-specific mixes and percentages will be selected based on plant hardiness zones, physiographic regions, site conditions, and availability.

Table 2: Wetland Bank Stabilization Seed Selection

<b>WETLAND STABILIZATION SEED MIX*</b>			
<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>	<b>INDICATOR STATUS</b>	<b>PHYS. REGION</b>
<b>GRASSES - 90% OF TOTAL MIX</b>			
<i>Carex frankii</i>	Frank's Sedge	OBL	ACP/EMP
<i>Carex lurida</i>	Shallow Sedge	OBL	ACP
<i>Carex vulpinoiadea</i>	Fox Sedge	OBL	ACP/EMP
<i>Dichanthelium clandestinum</i>	Deertongue	FACW	ACP
<i>Elymus submuticus</i>	Virginia Wildrye	FAC	ACP/EMP
<i>Juncus effusus</i>	Common Rush	OBL	ACP
<i>Leersia oryzoides</i>	Rice Cutgrass	OBL	ACP/EMP
<i>Panicum virgatum</i>	Switchgrass	FAC	ACP/EMP
<i>Polygonum sagittatum</i>	Arrowleaf Tearthumb	OBL	ACP/EMP
<i>Scirpus atrovirens</i>	Green Bulrush	OBL	ACP/EMP
<i>Solidago canadensis</i>	Canada Goldenrod	FACU	ACP/EMP
<i>Tridens flavus</i>	Purpletop	FACU	ACP/EMP
<i>Tripsacum dactyloides</i>	Eastern Gamagrass	FACW	EMP
<b>FORBS - 10% OF TOTAL MIX</b>			
<i>Mimulus ringens</i>	Allegheny Monkeyflower	OBL	ACP/EMP
<i>Rudbeckia hirta</i>	Blackeyed Susan	FACU	ACP/EMP
<i>Verbesina alternifolia</i>	Wingstem	FACU	ACP/EMP

\*This is an all-inclusive list of potential wetland species to be applied to disturbed wetland areas. Site-specific mixes and percentages will be selected based on plant hardiness zones, physiographic regions, site characteristics, and availability.

## B. Temporary Vehicular Stream Crossing - Standard & Specification 3.24

Crossing waterways is necessary during stream restoration construction. For stream projects this modification is classified as a primary control measure. Likewise, most wetland bank projects are located adjacent to waterways, usually perennial, and crossing these waterways is often necessary during construction. In many cases the stream channel is too wide to realistically construct a temporary bridge as described in Std. & Spec. 3.24.

Angler proposes to use a modified Temporary Bridge Crossing constructed of wood, metal, stone, or other non-erodible material. Instead of spanning the stream near the top of bank, a timber or metal bridge will be placed on top of either timber planking or stone blocks, which are set on the stream bottom to elevate the bridge above the stream's base flow. Because this type of temporary bridge will typically be located below the top of bank elevation removal prior to significant rainfall event is necessary. To prevent sediment discharge from the construction access along the stream bank, stone, mulch, or other suitable material will be used to stabilize the ingress/egress from the top of bank to the bridge. All other design and installation criteria including materials, alignment, width, etc., as well as maintenance requirements will be in accordance with design Std. & Spec. 3.24 for bridge crossings.

### **C. Turbidity Curtain - Standard & Specification 3.27**

In certain situations, where all other erosion and sediment control measures have been implemented and there is still concern that a significant amount of sediment could be released downstream, a turbidity curtain can be applied. This secondary control measure shall only be utilized as redundant control in the prevention of downstream sedimentation, as well as to further isolate the work activities from downstream reaches. At no point shall this practice be used as the primary control for stream projects and shall always be used in conjunction with other measures.

The Std. & Spec. 3.27 of the VESCH that applies to turbidity curtains discourages the use of a turbidity curtain across stream flow. However, the cross-stream application of a turbidity curtain in stream restoration projects may minimize sediment transport from in-stream work areas. This practice will be utilized, given the following conditions and design considerations:

- The curtain shall only be left in place during working hours and removed after each working day or when there is an immediate threat of significant rain.
- The curtain shall be located downstream of the work area and shall span the stream in an area with a minimum base flow depth of  $\geq 2$  feet. The curtain shall be anchored solidly on the above stream banks.
- A 6-inch minimum gap shall be left between the bottom of the turbidity curtain and the stream bed at base flow conditions.
- The curtain design shall conform to the Type III turbidity curtain specified in Std. & Spec. 3.27 of the VESCH.
- Sediment in the area located upstream of the curtain shall be removed only after upstream work is completed and other temporary stream diversion techniques are employed adjacent to the area.

## **4. ESC Practices not currently in VESCH**

In addition to the standard ESC practices, Angler proposes the use of other ESC measures for wetland banks and stream restoration projects that are either not currently in VESCH, that are not utilized in the same capacity, or that are unique to stream restoration and wetland bank construction. Implementation of proprietary ESC measures or of ESC measures for stream restoration or wetland bank projects not currently in VESCH shall be installed per the manufacturer's instructions and with the intent of the VESCH specifications. Furthermore, use of these practices will adequately meet all relevant Virginia Minimum Standards. Should the use of ESC measures not currently in VESCH fail to effectively control soil erosion, sediment deposition, and non-agricultural runoff, then VESCH control measures shall be used.

Practices submitted in this section are grouped by implementation intent, stream or wetland. Stream measures are discussed first. Stream practices are labeled with 'SR' and numbered 1-8. Wetland practices are labeled 'WB' and numbered 1-4. These methods, while discussed in context of either a stream restoration or wetland bank project, may be implemented interchangeably as appropriate.

## **Streams**

Angler proposes to utilize the temporary flow diversion guidelines included in the 2004 Virginia Stream Restoration & Stabilization Best Management Practices Guide (Practice 5.1 – 5.5). Additional measures successfully used by other states or designed specifically for stream restoration projects are also included below. Although these practices are not unique to stream restoration projects, they do require certain design requirements and installation procedures specific to stream restoration projects. Appendix A includes a sample Erosion and Sediment Control Plan illustrating the typical application of the control measures described below. Please also refer to Appendices B through I for the standards and specifications for measures SR-1 through SR-8.

### ***Primary Control Practices***

#### **A. Pump-Around Diversion (SR – 1)**

The pump-around diversion (PD) allows for clear water diversion around the designated work area during stream restoration projects. This form of diversion is necessary when restoration practices span the entire width of the stream channel and/or a linear reach of stream segment is to be simultaneously worked on. This practice also limits potential for downstream sedimentation because in-stream work will be completed in the dry and all denuded areas will be stabilized before re-introduction of water back into stream channel. The total work area of PD should not exceed the length of area that can be completed and stabilized in one (1) working day. PD should be completed and removed at the end of each day; if time to complete work area will exceed one (1) day alternative practices should be used. This practice should also be limited to base or low flow conditions were applicable to ensure adequacy of pump equipment. Practice is most applicable in small to medium watersheds with relatively small base flow discharges. This allows for multiple pumping options and equipment to sufficiently handle necessary pump capacity. A detail of this practice is included as Appendix B. Based on these considerations we propose the following modifications to Practice 5.1:

- Use of practice not limited to watershed size but by capacity of pump and height of in-stream barriers.
- Pump selection shall be sized to adequately pump base flow at a head greater than the in-stream barrier height.
- Downstream geotextile lined flow transition point may be used. This feature allows for dispersion of pump discharge to a non-erosive velocity within the existing stream channel.
- All other applicable ESC measures shall be used in conjunction with PD

**Maintenance:** During active pump-arounds, the performance of the configuration and surrounding area is to be monitored continuously for any changes in the stream flow or pump performance. The backwatered area is to be monitored for headwater depths to not rise to the top of the water barricade or start flowing undesirable directions out of the stream channel. The intake is to be kept free of debris and that the intake protection is functioning. The pump must be maintained in operating condition and ensure that adequate fuel is immediately available for the expected work duration until completion. The stable discharge point is to be monitored for indicators of erosion and must be revised to maintain a stable discharge point.

## **B. Sandbag/Stone Diversion (SR – 2)**

No modifications are proposed to Practice 5.2. A detail of this practice is included as Appendix C.

**Maintenance:** Once a sandbag diversion is installed and utilized, the work area is to be monitored for excessive inflow from the barrier and impermeable sheeting. If the flow into the work area is greater than a controllable rate by the dewatering pump, corrective actions are to be taken immediately to seal the perimeter of the barrier or additional layers added to the width of the barrier. Any shifts or evidence of lateral movement must be supported and corrected immediately. A sandbag diversion is a short term practice and long term maintenance is not required.

## **C. Diversion Pipe (SR – 3)**

Diversion Pipes (DP) allow for diverting clear water through a short segment of stream channel during construction. Due to variations in watershed hydrology, this practice may only be applicable in small to medium size watersheds. The limiting factor for use of diversion pipes is the pipe diameter necessary to adequately handle discharges versus having sufficient work space within the stream channel to conduct the work. Larger watersheds will require increased pipe sizes; thus, the usable work area within the channel may be limited. Therefore, it will be necessary to determine the flow at normal or base flow conditions, as well as the 2-year and 10-year storm discharges to determine if pipe diversion is feasible based on anticipated time that the practice will be in place. See Appendix D for a detail of this practice. Based on these considerations we propose the following modifications to Practice 5.3:

- Pipe Diversions shall not be used for longer than 72 hours in watersheds with greater than 1 square mile drainage area.
- If the practice is to be in place for less than 72 hours, then the pipe size shall be based on VESCH Std. and Spec. 3.25 for flume pipe crossing, and will be sized to handle base flow conditions. Due to the short duration and smaller pipe sizes to accommodate base flow, the work area can be increased inside of the channel perimeter increasing work efficiency. Due diligence and adequate construction planning will minimize the risk of overflow from storm events.
- If practice is to be in place for greater than 72 hours, then the pipe size shall be based on VESCH Std. and Spec. 3.25.
  - If diversion pipe is to be in place for 72 hours to 14 days, then pipe shall be sized to handle a 2-year discharge.
  - If it is to be in place for 14 days to one year, then pipe shall be sized to handle a 10-year discharge.
  - This practice will not be used if stream diversion is necessary for greater than one (1) year.
- All other applicable ESC shall be used in conjunction with this practice.

**Maintenance:** Similarly to SR-1, the performance of the configuration and surrounding area is to be monitored continuously for any changes in the stream flow or diversion pipe performance. The backwatered area is to be monitored for headwater depths to not rise to the top of the water barricade or start flowing undesirable directions out of the stream channel. The inlet of the pipe is to be kept free of debris. The stable discharge point is to be monitored for indicators of erosion and must be revised to maintain a stable discharge point.

#### **D. Portable Dams/Barriers (SR – 4)**

No modifications are proposed to Practice 5.4. Details of this ESC measure can be found in Appendix E.

**Maintenance:** Portable dams consists of varying materials and proprietary products designed for temporary damming of water. Dams are to be continuously maintained per manufacturer's specifications as well as monitored for leakage, integrity of the material and signs of shifting of changes in the underlying soils. Corrective actions must be made immediately to protect the work area.

#### **E. Temporary Flow Diversion (SR – 5)**

The Temporary Flow Diversion (FD) includes specifications for a temporary diversion channel that allows for clear water diversion around work area and dry construction in the existing stream channel. This practice is most applicable when anticipated stream work will last longer than one (1) day and isolation of construction activities is necessary over a longer period of time.

This practice is most applicable in small to medium watersheds. Implementation of this practice, however, should not be limited to watershed size, and factors such as bankfull velocity and discharge, total disturbance area for constructing diversion, potential flooding or infrastructure damage in area near diversion, and potential stream degradation at diversion confluences with the stream should also be considered. Channel design will be based on "bankfull" discharge, which represents the channel forming flow of the existing channel and would limit shear stress, stream power, and other erosive forces if larger storm events occur during the construction period. Other ESC practices shall be employed in conjunction with FD to ensure adjacent floodplain areas are protected in the event of overbank flow. Based on these considerations, we propose several modifications to Practice 5.5. Please refer to Appendix F for details of this practice and the specifications listed below. Other design, construction, and maintenance information will be in accordance with VESCH Std. and Spec. 3.25 – Utility Stream Crossing: Diversion Channel Crossing.

- Practice is not limited to watershed size as long as adequate channel size and lining is designed and used.
- Site specific hydrologic and hydraulic parameters will be considered when designing and constructing FD.
- The bottom width of the stream diversion shall equal the bottom width of the existing stream channel. The capacity of the designed channel shall be equivalent to the bankfull capacity of the existing channel.
- Channel linings shall be determined using Table 3.25-A on page III-229 and plate 3.25-2 on page III-231 of VESCH, or per manufactures acceptable velocity ratings for alternative channel linings, such as certain geotextile fabrics.
- Floodplain area immediately adjacent to diversion shall be stabilized with vegetation, mulch, etc. prior to use of the channel diversion.

**Maintenance:** SR-5 is to be maintained in compliance with VESCH 3.25 Diversions and includes securing construction material to prevent being washed downstream.

## **F. Temporary Access (SR – 6)**

The Temporary Access (TA) allows for the modification of a stream bank to provide a stable access point for equipment when working in a live water course. In situations where work in the live water course is unavoidable, consideration will be given to provide adequate protection from sediment loss and to minimize encroachment to the stream channel to satisfy MS 12. If flow diversions, as outlined above, are not practicable based on stream size, watershed conditions, or site constraints, then equipment access to the stream channel may minimize overall impacts and downstream sediment loss compared to implementation of other practices. A TA can be typically installed with much less impact to the bed, bank, and floodplain. Furthermore, the TA will only be used for immediate ingress and egress to the stream work area and by only that equipment necessary to work in the channel. All other use of this feature is strictly prohibited. A detail of this practice is included as Appendix G. Other provisions for the use of this practice also include:

- Prior to access into stream all equipment shall be thoroughly inspected for leaks or defects. Any such problems shall be fixed prior to entering channel.
- An equipment wash rack shall be provided onsite (VESCH Plate 3.02-1 and Std. and Spec. 3.02) to remove excess mud from equipment before use in channel.

**Maintenance:** During the presence of a Temporary Access (SR-6), the condition of the non-erodible surfaces is to be inspected at the end of each day or after it is no longer needed in a work day to look for erosion potential areas. Areas identified are to be stabilized and protected immediately.

## **G. Timber Mat Construction Access Road (SR – 7)**

Stream restoration is typically sited near existing waterways, wetlands, floodplains, and other sensitive soil areas, so in many cases construction access must cross these areas. In order to prevent impact to these areas and to minimize the transport of sediment by vehicular traffic, timber mats will be utilized. Details on this ESC measure can be found in Appendix H.

**Maintenance:** The maintenance of a timber mat access road is identical to VESCH 3.03, construction road stabilization with the understanding that the stable surface of the route is generated from the timbers rather than gravel.

## **Secondary Control Practices**

### **H. Rock Filter Dam (SR – 8)**

A Rock Filter Dam (RD) is a temporary stone filter dam installed across small to medium streams that serves as a sediment filtering structure. Due to the nature of stream construction, release of sediment may be unavoidable during in-stream or channel work. This practice will serve as a secondary standard after all other applicable primary standards have been employed for the project. At no time shall this practice be used as a primary standard or serve as the only sediment control device for stream projects. The structure is not intended to impound substantial volumes of water and will use the stream channel for storage by creating a slack water condition for settling of wash load created during in-stream work. Refer to Appendix I for a detail of this practice. The following design criteria shall be followed when implementing a RD.



- Location of rock filter shall be based on site specific locations and placed at the downstream end of existing pool feature.
- Dam height shall not exceed channel bank height. The center 1/3 of the dam shall be a minimum of 6 inches below the remaining structure.
- Side slopes shall be 2:1 or flatter
- Stone size shall be determined based on stream discharge estimates and shall be capable of remaining in place. Smaller stone may be placed on upstream side of dam to improve filtering efficiency.
- RD shall be removed or flattened prior to a significant rainfall event. This will ensure that the dam will not impede the flow of water and minimize any risk of flanking or erosion around the RD.

**Maintenance:** The maintenance and frequency of a rock filter dam is comparable to the VESCH 3.20, Rock Check Dam. This includes removal of the impounded sediment and ensuring the proper geometric layout to ensure performance.

## **Wetlands**

Angler proposes the following additional measures successfully used by other states or designed specifically for wetland mitigation bank projects. The following is a discussion of how each Wetland Bank Standard and Specification meets the Minimum Standards. Appendix A includes a sample Erosion and Sediment Control Plan illustrating the typical application of the control measures described below. Please also refer to Appendices J through M for the standards and specifications for each measure described below.

### **I. Permanent Wetland Berm (WB-1)**

Most wetland bank sites consist of a series of wetland cells, which are flat areas, typically less than 2% slopes, surrounded by permanent perimeter berms with hydraulic control structures connecting them. These permanent berms can also be utilized during construction as permanent diversion berms. Permanent Wetland Berms are constructed as a first step in the construction process and are made functional prior to all upslope land disturbance. A detail of this ESC practice is included in Appendix J.

**Maintenance:** VESCH 3.09, Diversion Dikes, outline the required maintenance for a permanent wetland berm. This maintenance ensures the stability of the berm surface and corrective actions from storm damage and vehicular traffic.

### **J. Weir Outlet (WB-2)**

Typically, wetland bank projects include multiple wetland cells that consist of both perimeter berms and intermediate berms with a number of weir outlets. The location, size and frequency of the outlets are based on site conditions and designed to maintain non-erosive discharge velocities. In most cases, the only denuded area draining to the outlet is the wetland cell itself. Since a wetland cell is designed to have very little slope, or no slope at all, and because it is surrounded by berm(s) with weir outlet(s), it provides a storage volume that is much greater than typically required for sediment traps. Because of the structural composition of a wetland cell, and the fact that the associated berms and outlets are installed as a first step in the construction process, it provides effective erosion and sediment control. During construction of a wetland bank project, the weir outlet will control sediment-laden discharge, as well as convert any concentrated discharge to sheet

flow releasing it uniformly into a lower wetland cell or the undisturbed perimeter. Refer to Appendix K for details on the Weir Outlet (WB-2).

Maintenance: A weir outlet maintenance is documented in the outlet maintenance portion of the VESCH 3.13, Sediment Trap. This includes ensuring a stabilized condition of the outlet and maintaining the design elevations relative to the surrounding storage volume and permanent berms (WB-1).

#### **K. Timber Mat Construction Access Road (WB-3)**

Wetland bank projects are typically sited near existing waterways, wetlands, floodplains, and other sensitive soil areas, so in many cases construction access must cross these areas. In order to prevent impact to these areas and to minimize the transport of sediment by vehicular traffic, timber mats will be utilized. Details on this ESC measure can be found in Appendix L.

Maintenance: The maintenance of a timber mat access road is identical to VESCH 3.03, construction road stabilization with the understanding that the stable surface of the route is generated from the timbers rather than gravel.

#### **L. Dewatering Bag (WB-4)**

During the final vegetative stabilization of a created wetland cell, it may be necessary to dewater the cell in order to promote the germination and establishment of the planted vegetation. As an extra precaution during dewatering activities, a dewatering bag may be used to maintain non-erosive conditions. Details on this ESC measure can be found in Appendix M.

Maintenance: A dewatering bag is to be monitored continuously while in operation for indication that the bag may develop a hole or holes that would allow the flow rate to exceed the filtering capacity of the fabric or generate a direct discharge without filtration. Bags identified in need of maintenance are to be replaced and the holes not attempted to be patched, plugged or repaired.

## **V. Certification Statement**

"I certify under penalty of law that all documents and all attachments related to the submission and updating of Angler Environmental, a RES Company's Annual Standards and Specifications for Erosion and Sediment Control have been prepared under my direction or supervision in a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of a fine and imprisonment for knowing violations."



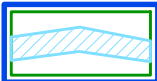
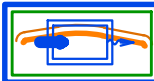
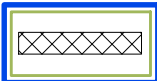

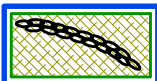
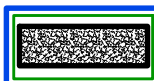
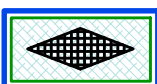

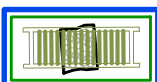
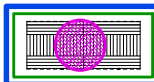
Bailey Wilfong, P.E.



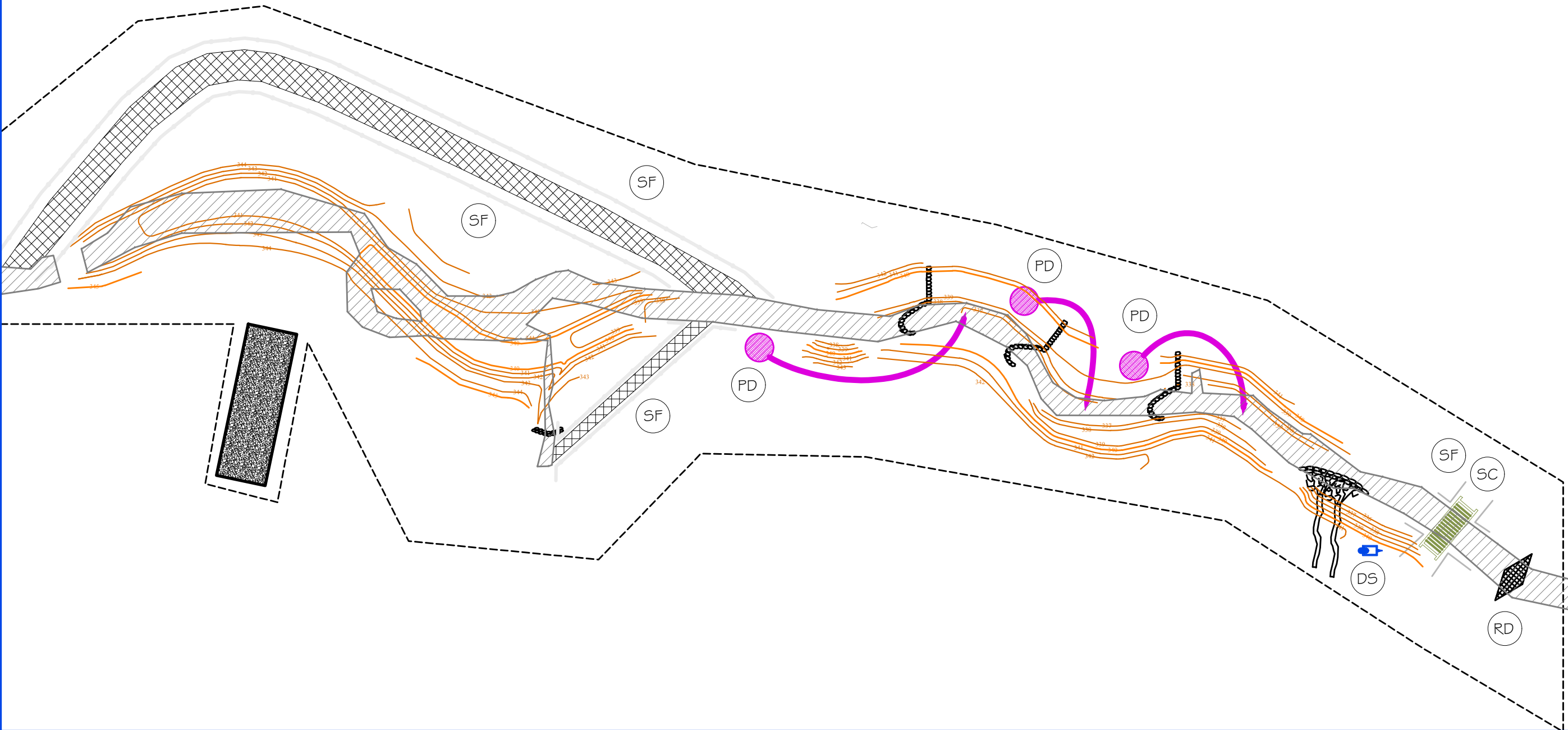
Erica Dudas, DCA 0435

## **Sample Stream Plans**

LEGEND:

	EXISTING STREAM			DEWATERING STRUCTURE	(DS)
	TEMPORARY FLOW DIVERSION	(FD)		LIMITS OF DISTURBANCE	(LOD)
	SANDBAG DIVERSION	(SD)		CONSTRUCTION ENTRANCE	(CE)
	SECONDARY CONTROL	(RD)		SILT FENCE	(SF)
	TEMPORARY STREAM CROSSING	(SC)		PUMP AROUND DIVERSION	(PD)

FOR INFORMATION  
PURPOSES ONLY  
NOT TO SCALE



PROJECT: SAMPLE  
APPLICANT: SAMPLE

SAMPL EROSION AND  
SEDIMENT CONTROL PLAN

XXXXXX COUNTY, VIRGINIA

REVISIONS:


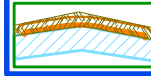




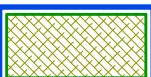
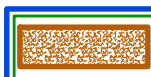
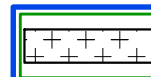


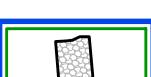

X

PROJECT MANAGER:	XX
DESIGNED:	XX
DRAWN:	XX
JOB NUMBER:	XX
DESIGN TYPE:	XX
DATE:	XX
SHEET NO:	XX

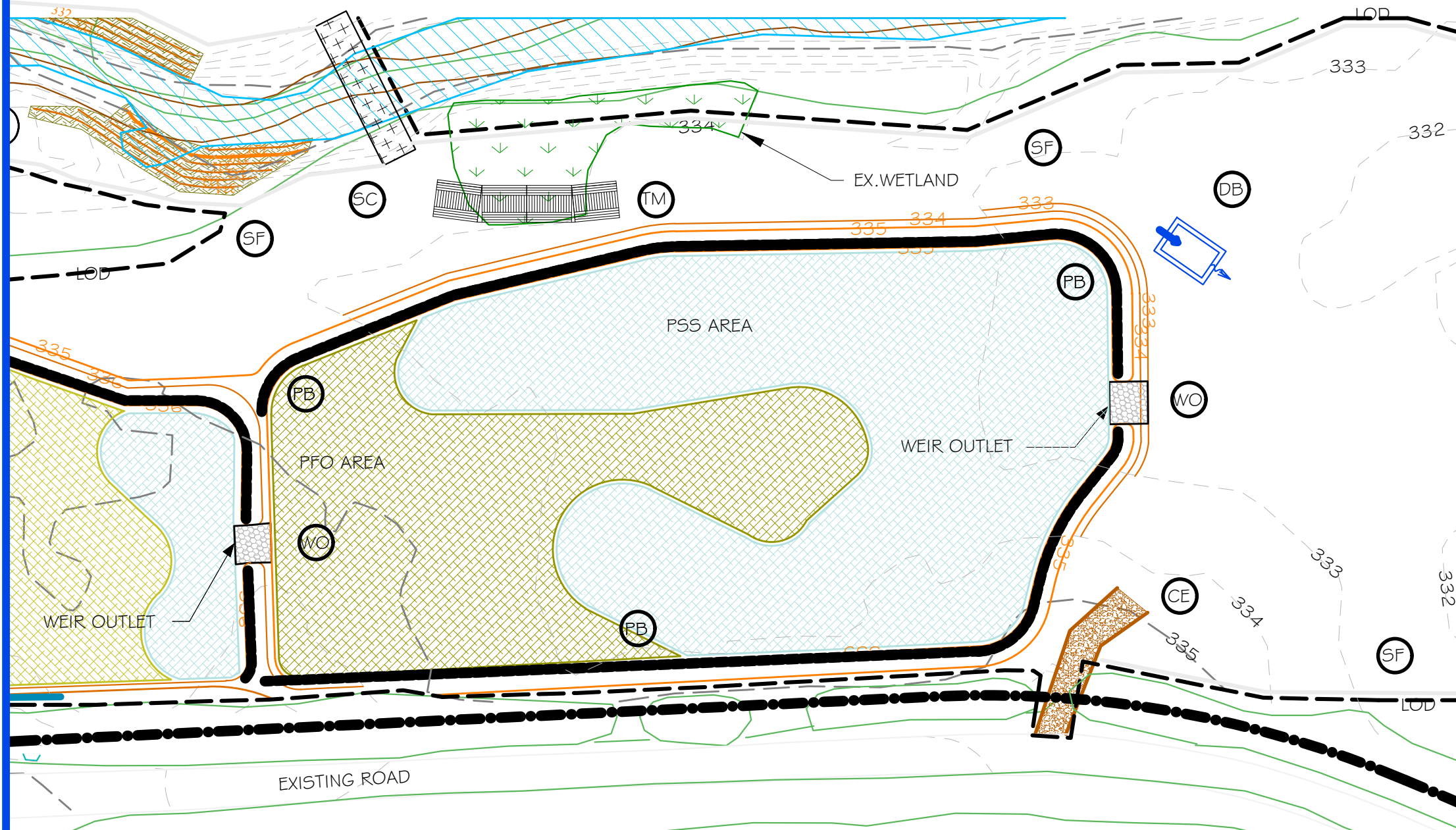
X OF XX

## **Sample Wetland Plans**

LEGEND:

	EXISTING STREAM		PROPOSED BANK STABILIZATION AND MATTING		DEWATERING STRUCTURE (DB) (DS)
	EXISTING EMERGENT WETLANDS		PERMANENT BERM (PB)		LIMITS OF DISTURBANCE
	FORESTED WETLAND CREATION (PFO)		CONSTRUCTION ENTRANCE (CE)		TEMPORARY STREAM CROSSING (SC)
	EMRGENT WETLAND CREATION (PEM)		SILT FENCE (SF)		
	WEIR OUTLET		TIMBER MAT (TM)		

FOR INFORMATION  
PURPOSES ONLY  
NOT TO SCALE



PROJECT: SAMPLE  
APPLICANT: SAMPLE

**SAMPL EROSION AND  
SEDIMENT CONTROL PLAN**

XXXXXX COUNTY, VIRGINIA

REVISIONS:



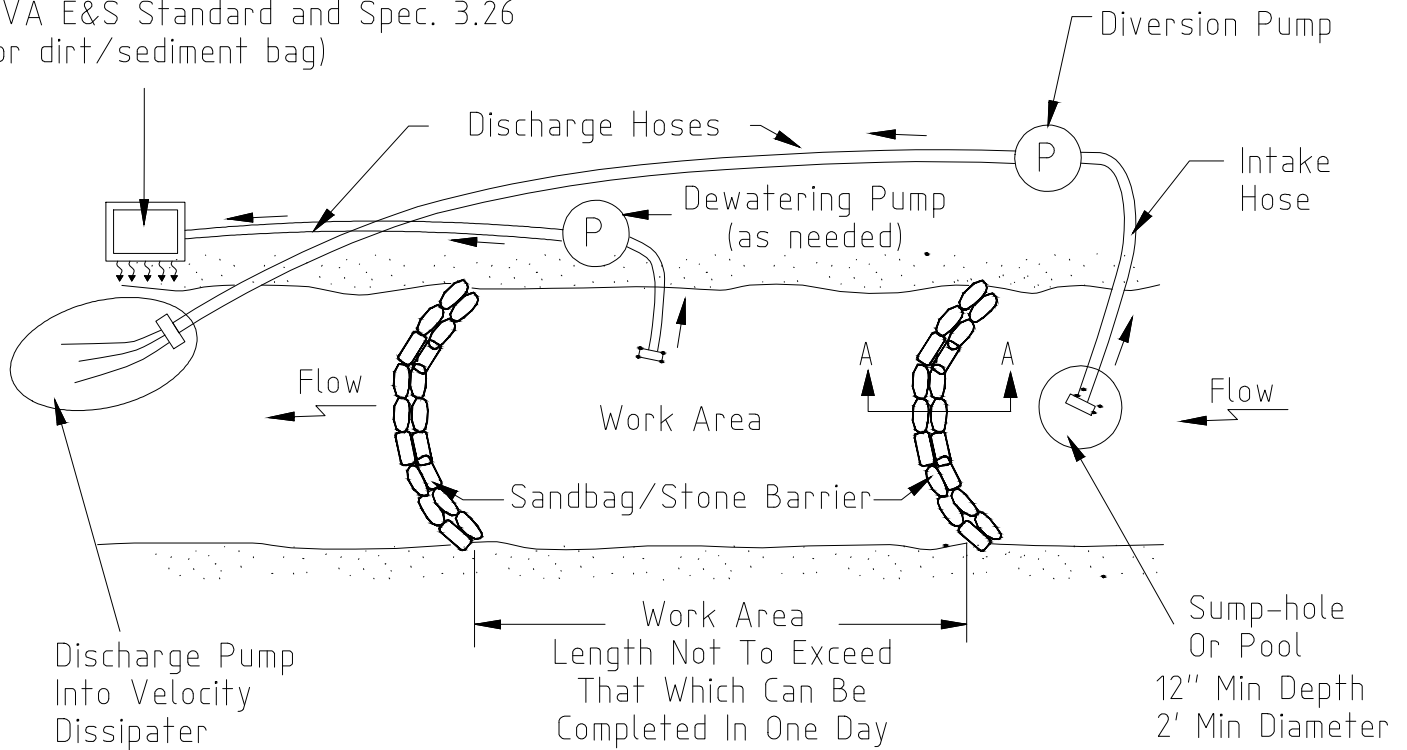
PROJECT MANAGER:	XX
DESIGNED:	XX
DRAWN:	XX
JOB NUMBER:	XX
DESIGN TYPE:	XX
DATE:	XX
SHEET NO:	XX

## **APPENDIX B**

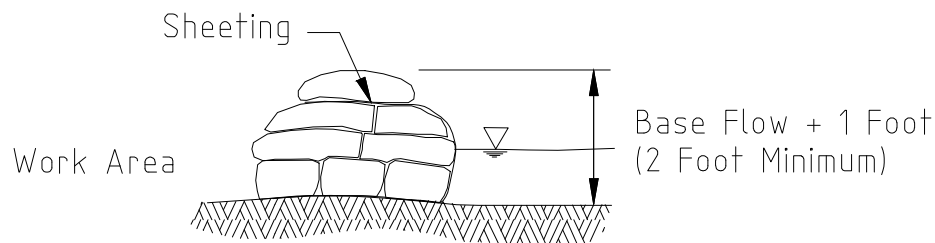
### **Stream Restoration Std. and Spec - Pump Around Diversion (SR-1)**



Dewatering Device  
(VA E&S Standard and Spec. 3.26  
or dirt/sediment bag)



PLAN



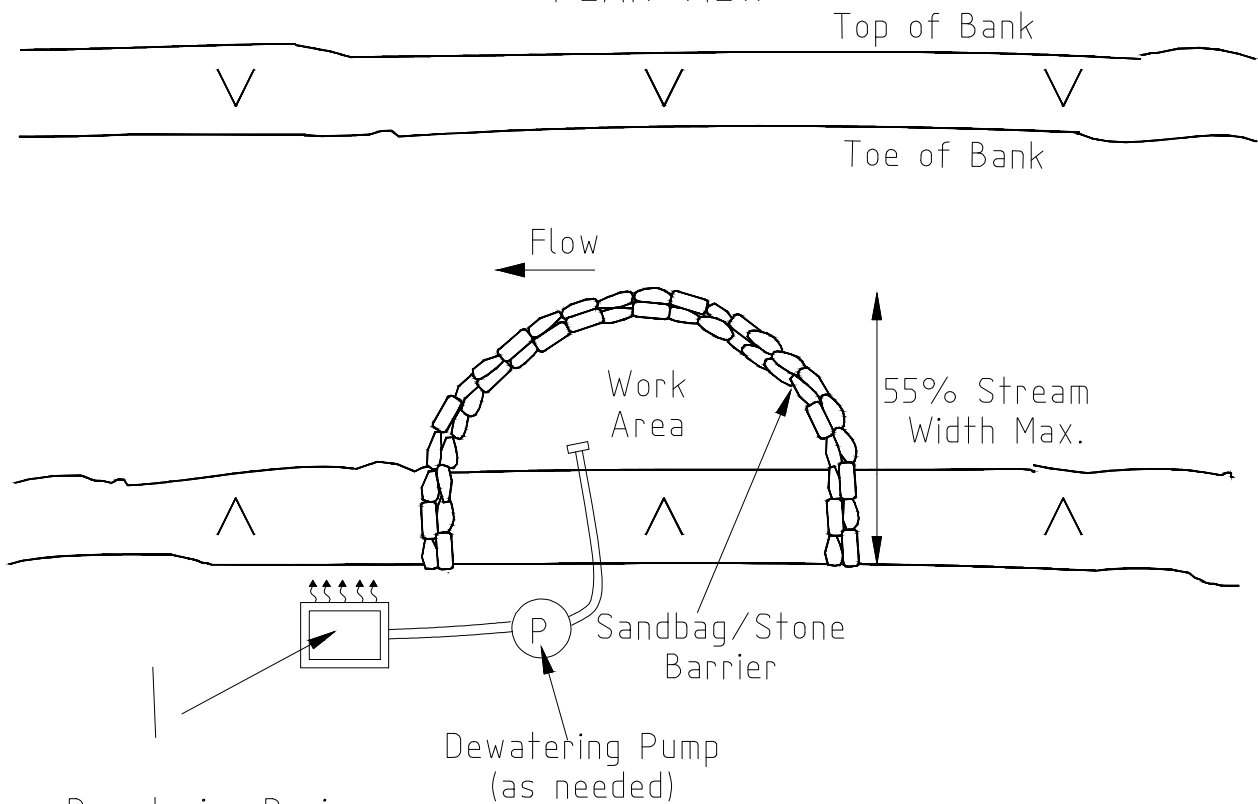
Cross Section Of Sandbag/Stone Diversion

SECTION A-A

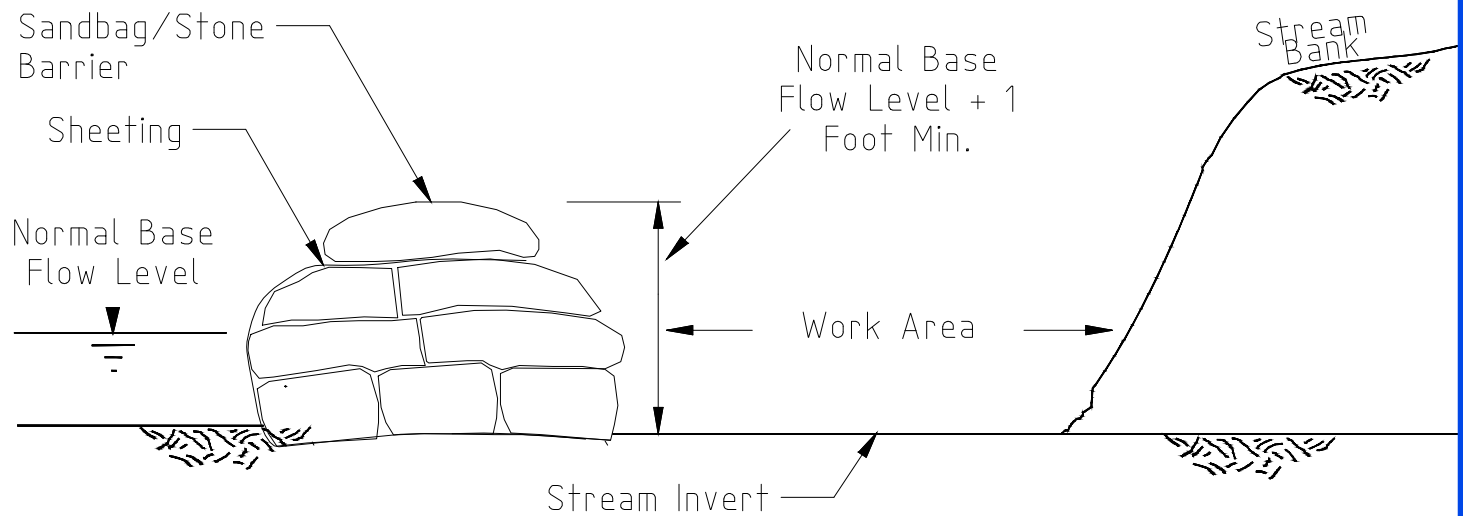
## **APPENDIX C**

### **Stream Restoration Std. and Spec. - Sandbag/Stone Diversion (SR-2)**

## PLAN VIEW



## TRANSVERSE SECTION VIEW



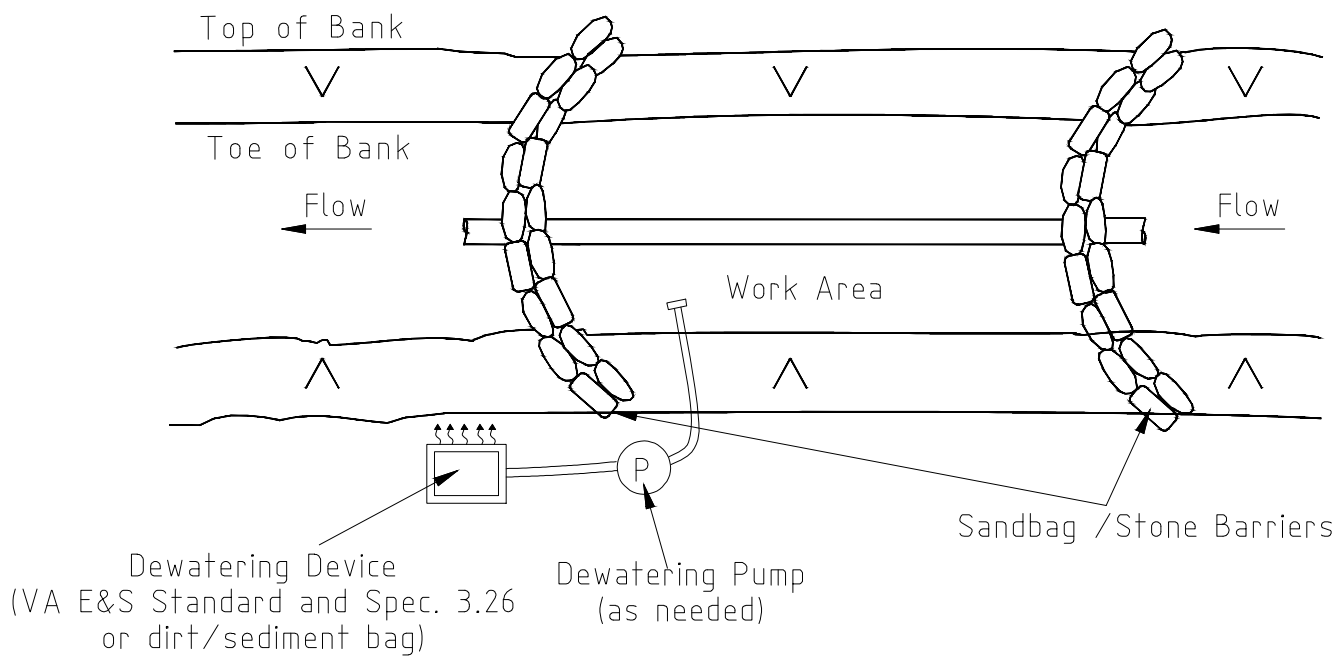
5367 TELEPHONE ROAD,  
WARRENTON, VIRGINIA 20187  
P: 703.393.4844  
WWW.RES.US

SANDBAG/STONE  
DIVERSION

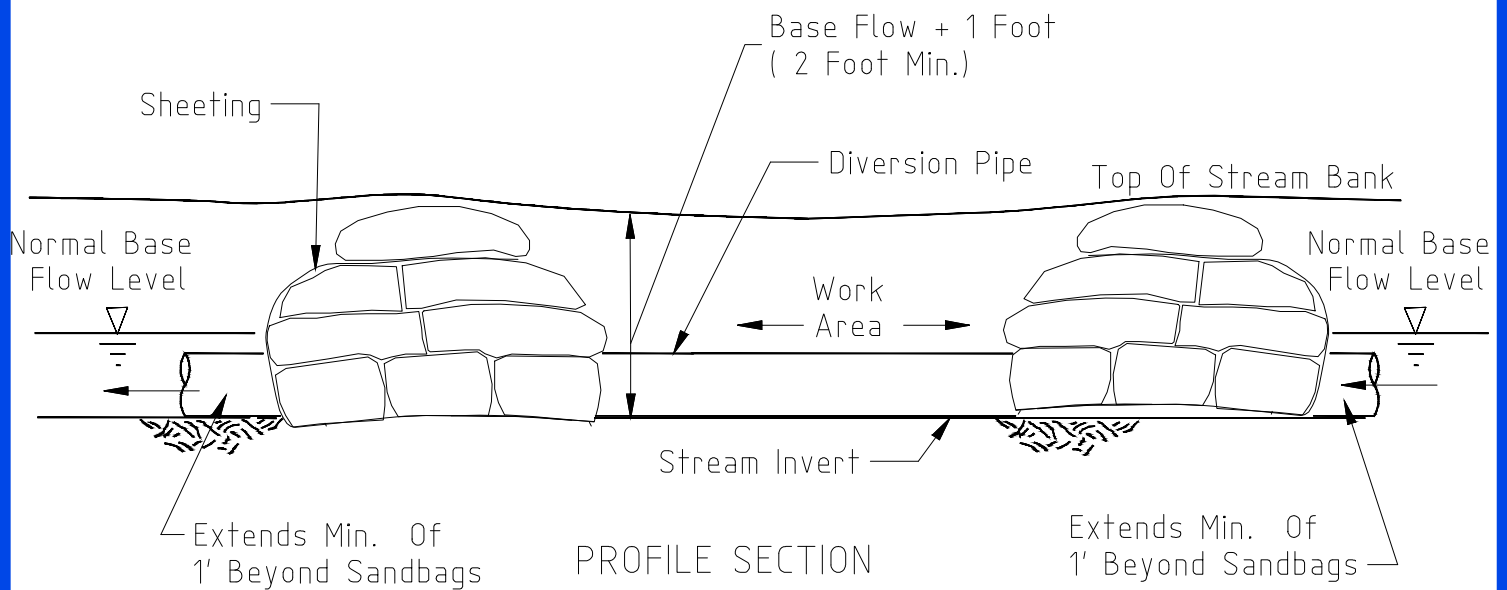
DETAIL SR-2

## **APPENDIX D**

### **Stream Restoration Std. and Spec - Diversion Pipe (SR-3)**



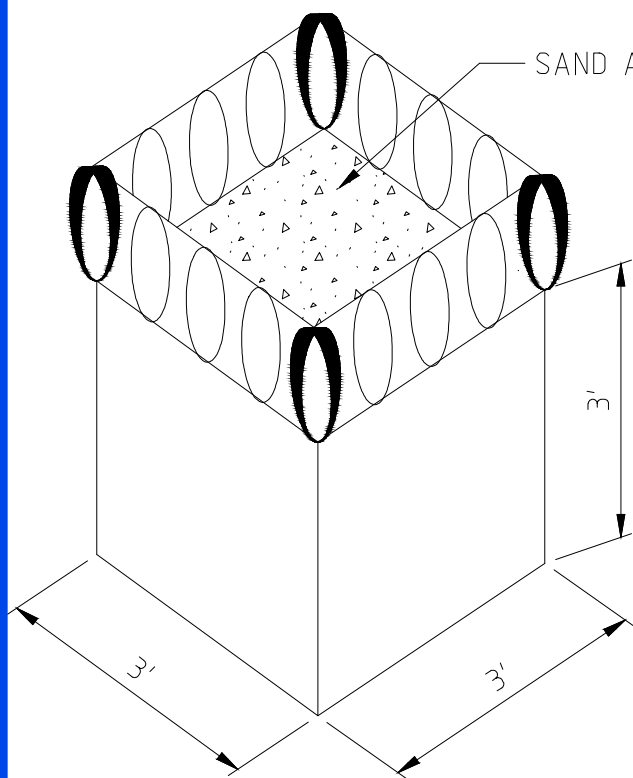
PLAN



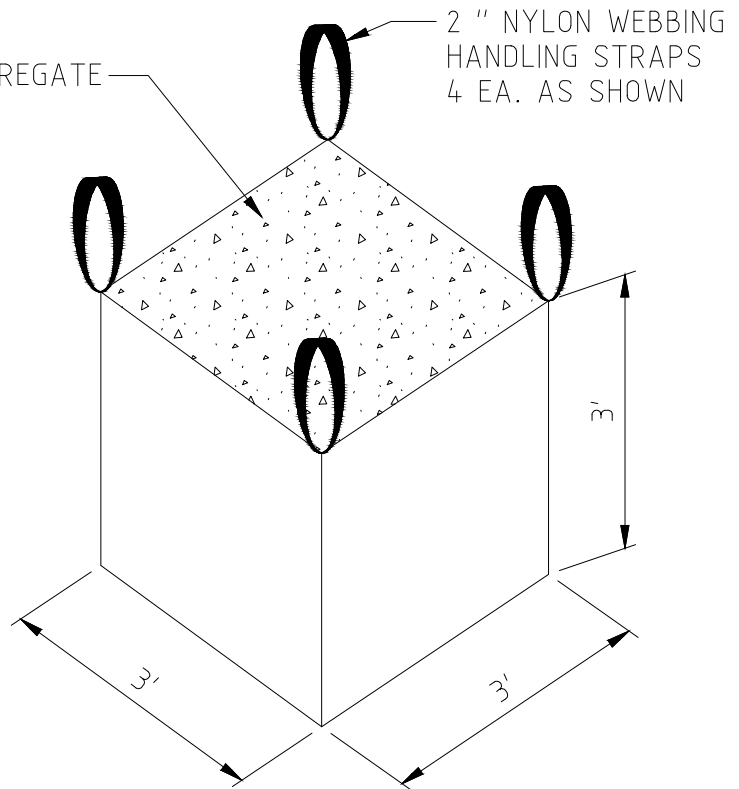
PROFILE SECTION

## **APPENDIX E**

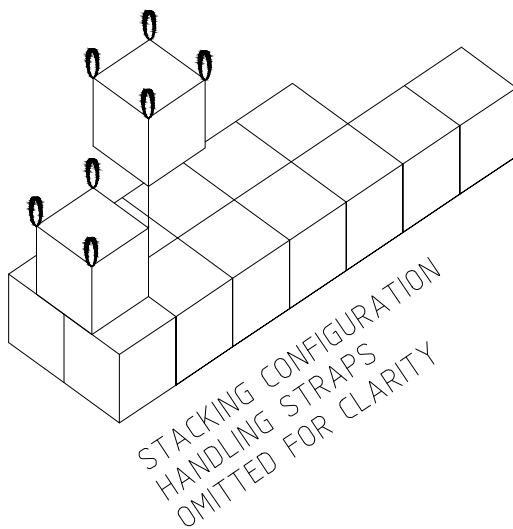
### **Stream Restoration Std. and Spec. - Portable Dams/Barriers (SR-4)**



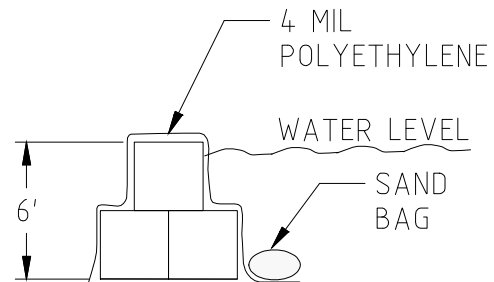
MODULAR DAM  
DUFFLE TOP STYLE



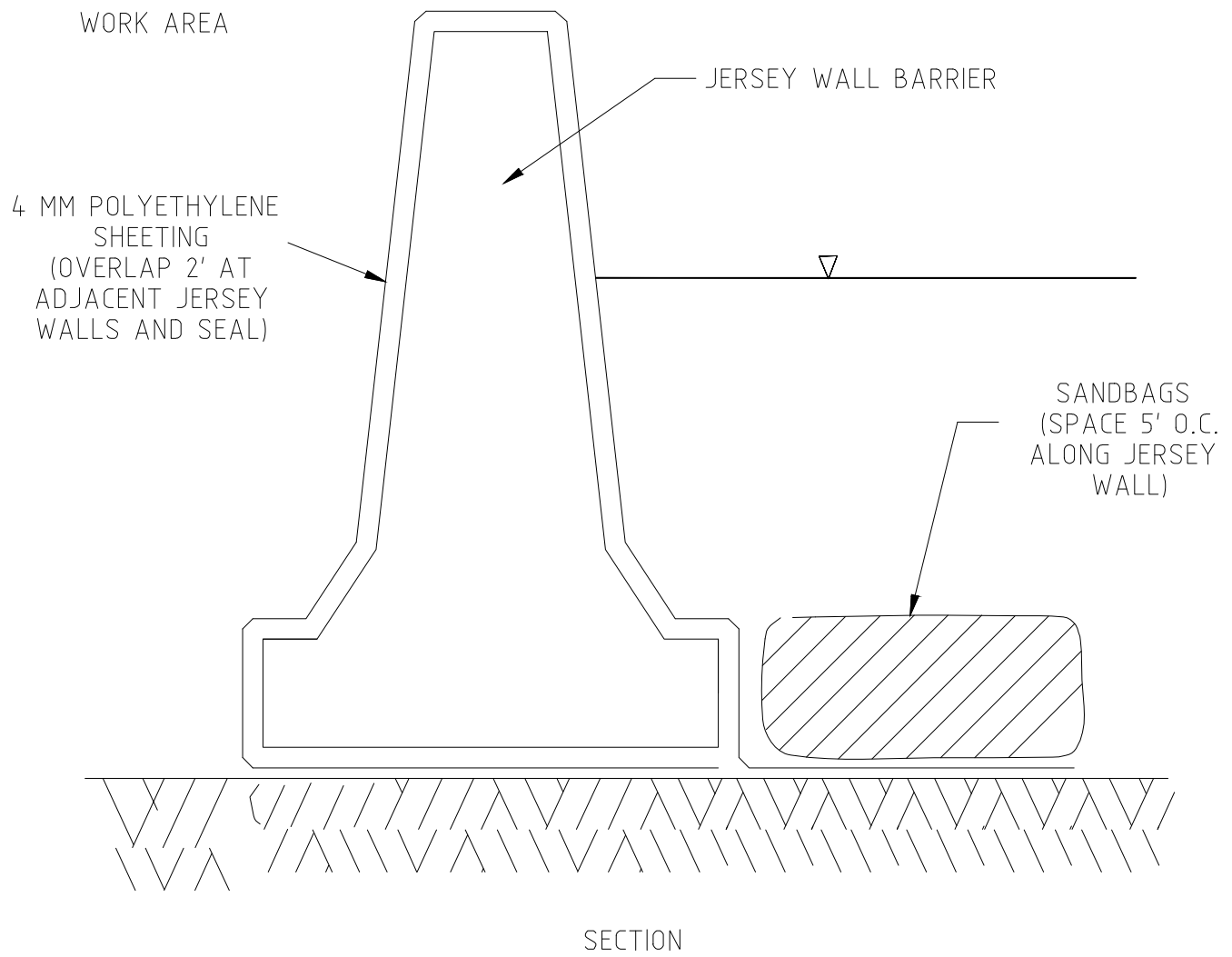
MODULAR DAM  
OPEN TOP STYLE



MODULAR DAM/BARRIER



## JERSEY WALL BARRIER



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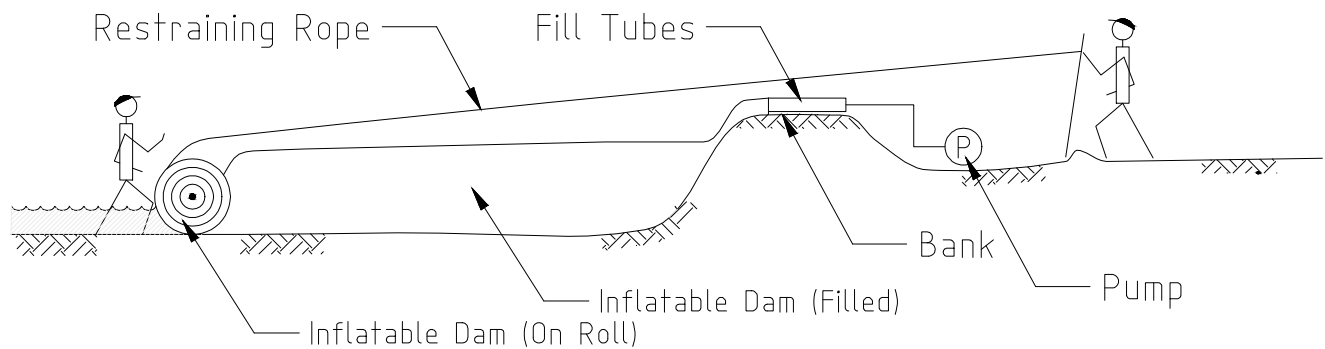
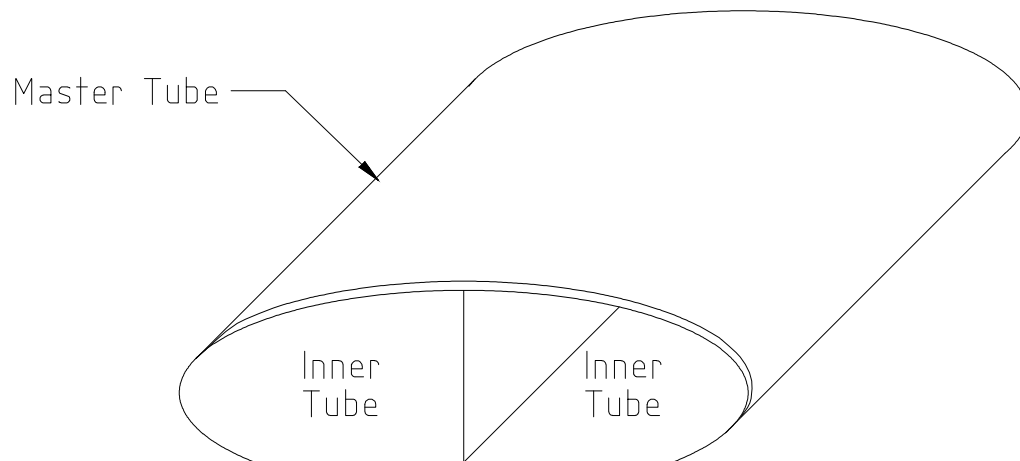
PORTABLE  
DAMS/BARRIERS

DETAIL SR-4B



# INFLATABLE DAMS

## SECTION



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PORTABLE  
DAMS/BARRIERS

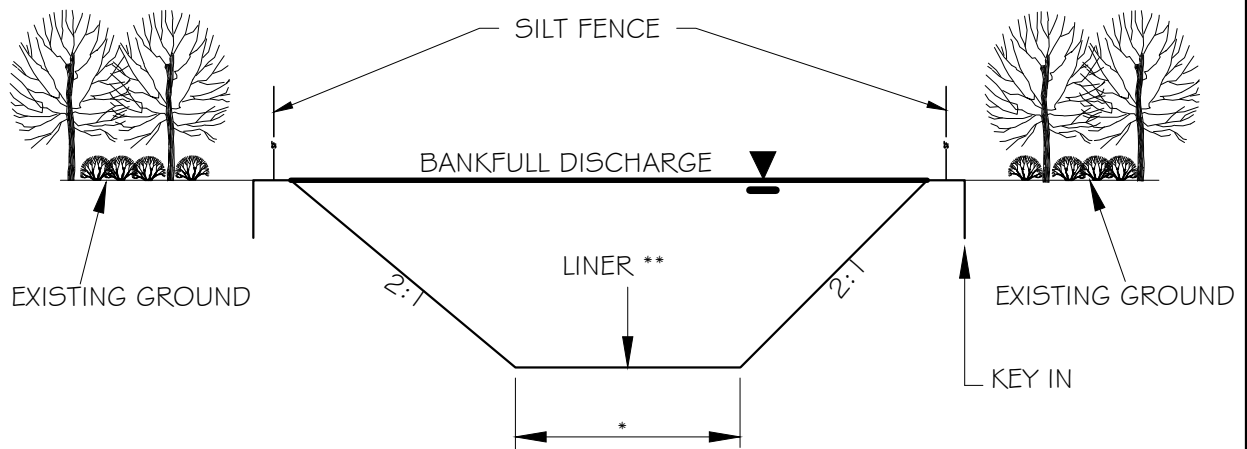
DETAIL SR-4C

## **APPENDIX F**

### **Stream Restoration Std. and Spec. - Temporary Flow Diversion (SR-5)**



## DIVERSION CHANNEL CROSSING



\* 6' MINIMUM OR WIDTH OF EXISTING STREAM WHICHEVER IS LESS

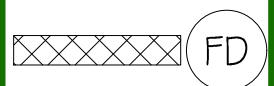
\*\* AN APPROPRIATELY RATED LINER SHALL BE USED TO PROVIDE ADEQUATE PROTECTION FOR THE CALCULATED VELOCITY IN THE DIVERSION CHANNEL. LININGS SHALL BE DETERMINED PER TABLE 3.25-A ON PAGE 229 AND PLATE 3.25-2 ON PAGE III-23 I OF THE VESCH, OR BY USING A LINING THAT IS RATED BY THE MANUFACTURER TO HANDLE THE CALCULATED VELOCITY IN THE CHANNEL.



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TEMPORARY FLOW DIVERSION  
(2 OF 2)

DETAIL SR-5

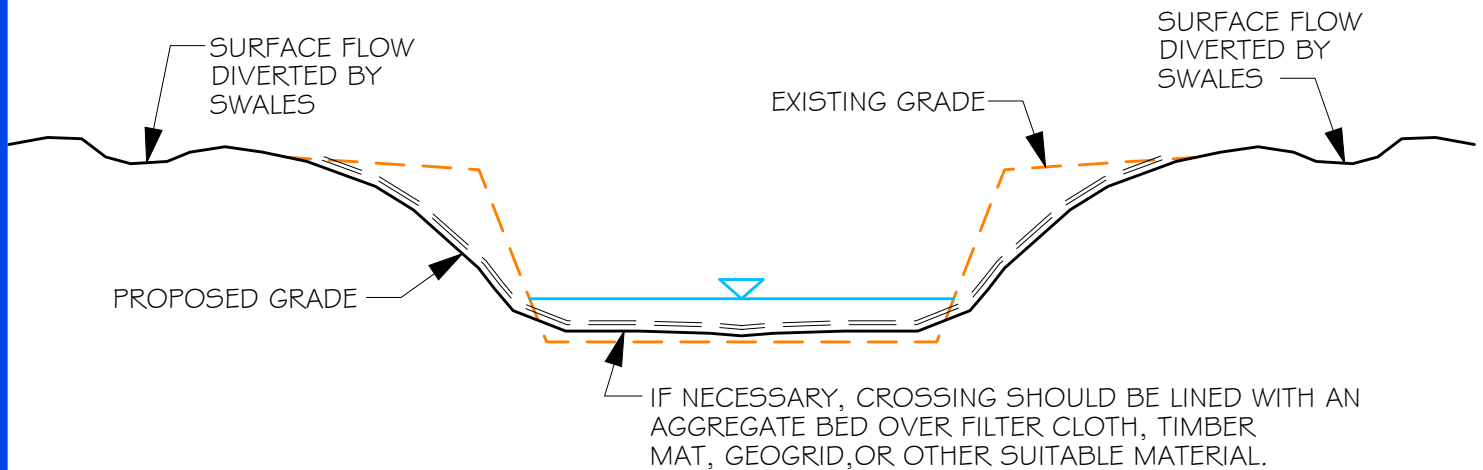


## **APPENDIX G**

### **Stream Restoration Std. and Spec. - Temporary Access (SR-6)**

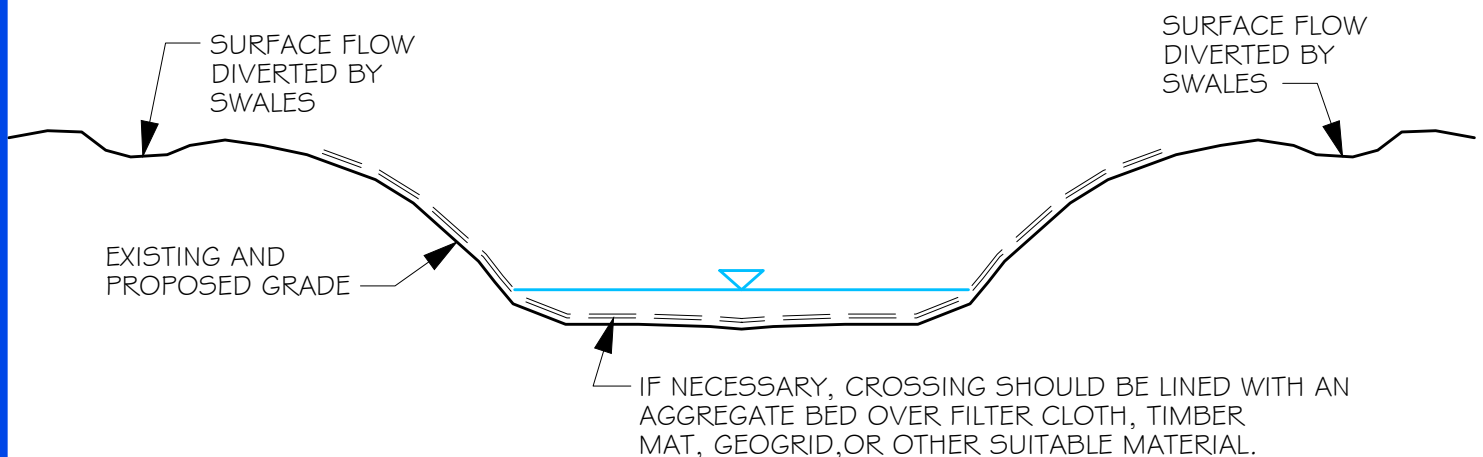
## DETAIL SR-6A: TEMPORARY ACCESS FORD (NEW)

NOT TO SCALE



## DETAIL SR-6B: EXISTING TEMPORARY ACCESS FORD

NOT TO SCALE



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STREAM RESTORATION STD & SPEC 6

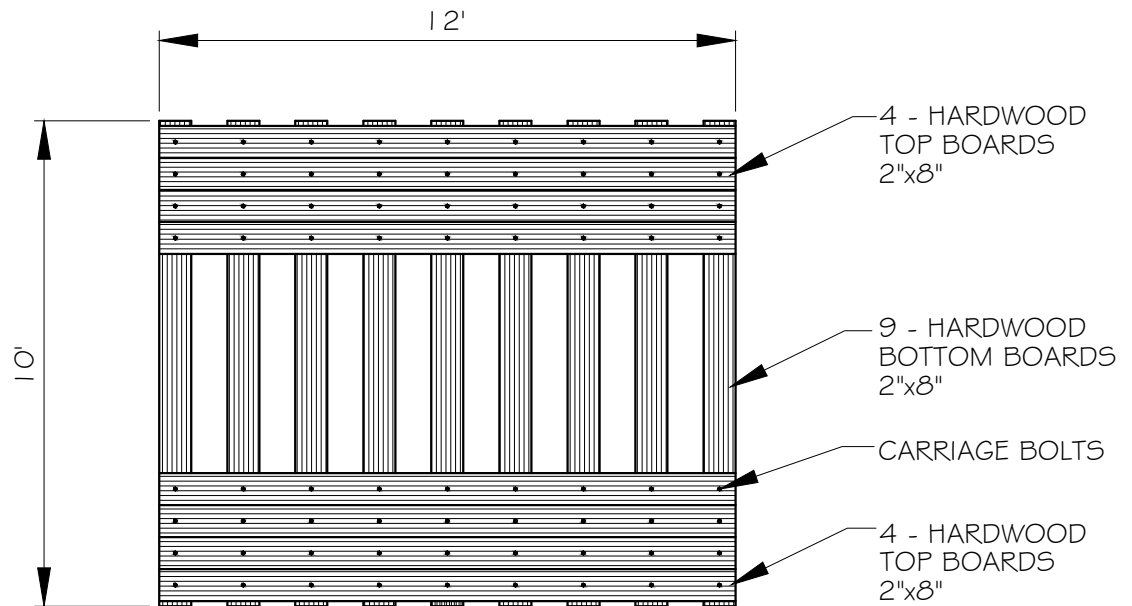
TEMPORARY ACCESS FORD  
FOR STREAM PROJECTS

DETAIL SR-6



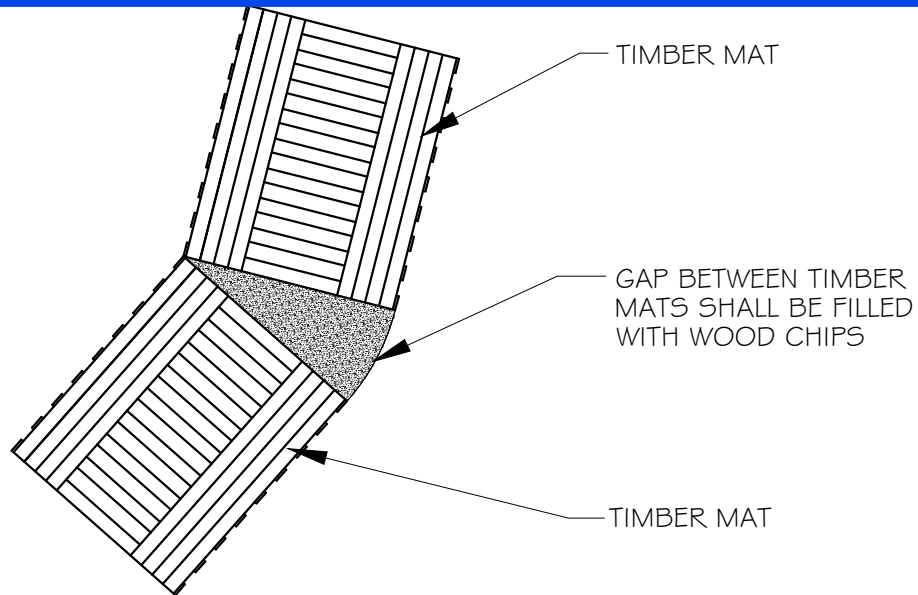
## **APPENDIX H**

### **Stream Restoration Std. and Spec. -Timber Mat Construction Access Road (SR-7)**



### TIMBER MAT NOT TO SCALE

TYPE: LAMINATED 2 PLY MAT  
 MATERIAL: HARDWOOD  
 APPLICATION: STRAIGHT ROADS WITH MODERATE  
 TURNS ON SANDY AND MUDDY ROADS  
 WEIGHT: 1,600 LBS EACH  
 WEIGHT CAPACITY: 40 TONS

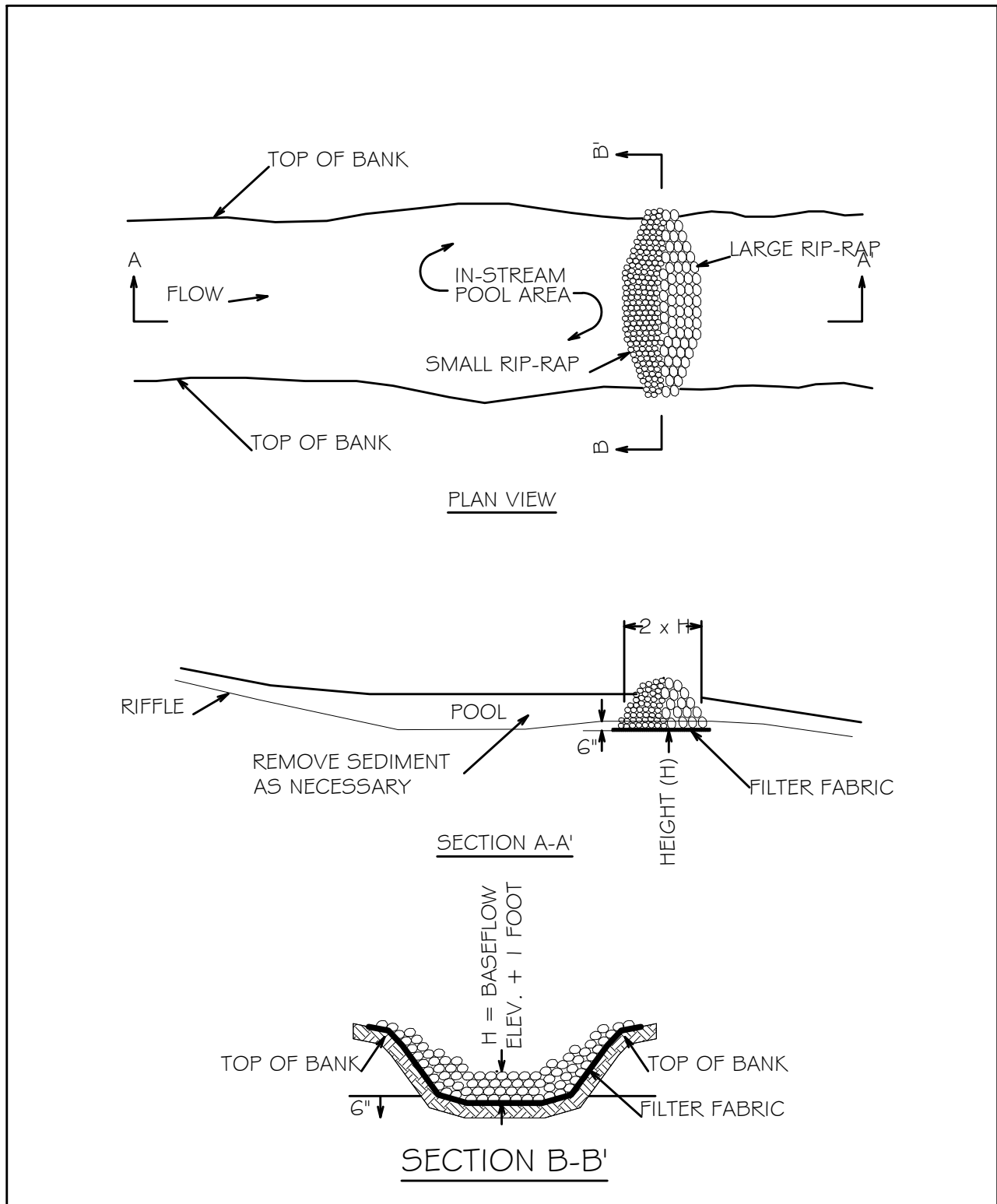


### TIMBER MAT TREATMENT OF ROAD TURNS NOT TO SCALE



## **APPENDIX I**

### **Stream Restoration Std. and Spec. - Rock Filter Dam (SR-8)**

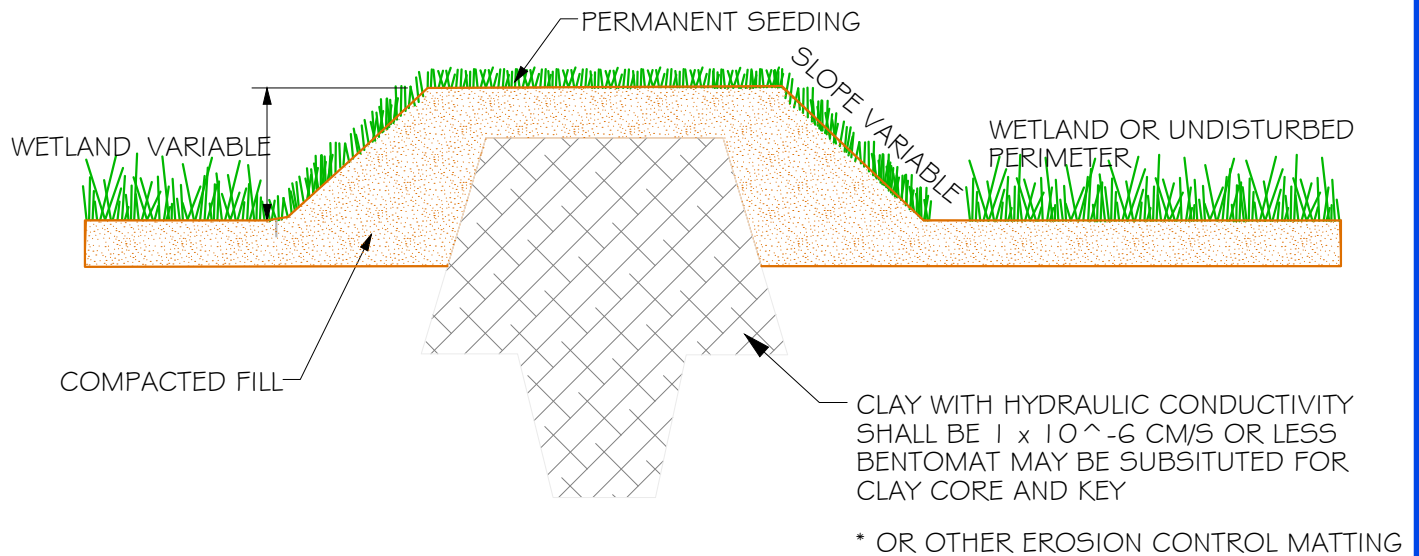


## **APPENDIX J**

### **Wetland Bank Std. and Spec. - Permanent Wetland Berm (WB-1)**

# DETAIL WB-1: PERMANENT WETLAND BERM AND KEY DETAIL

NOT TO SCALE



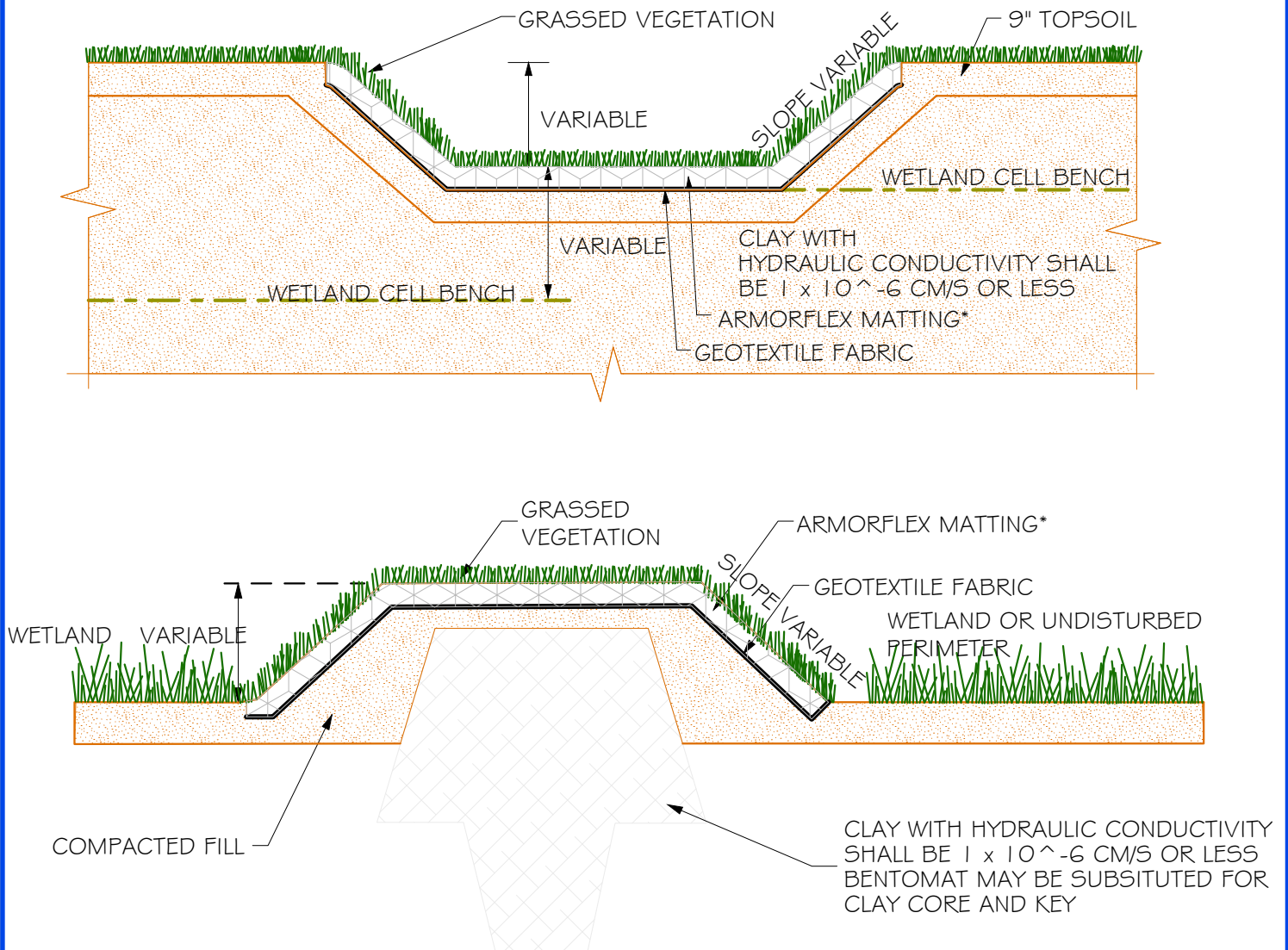
## **APPENDIX K**

### **Wetland Bank Std. and Spec. - Weir Outlet (WB-2)**

# DETAIL WB-2: WEIR OUTLET

NOT TO SCALE

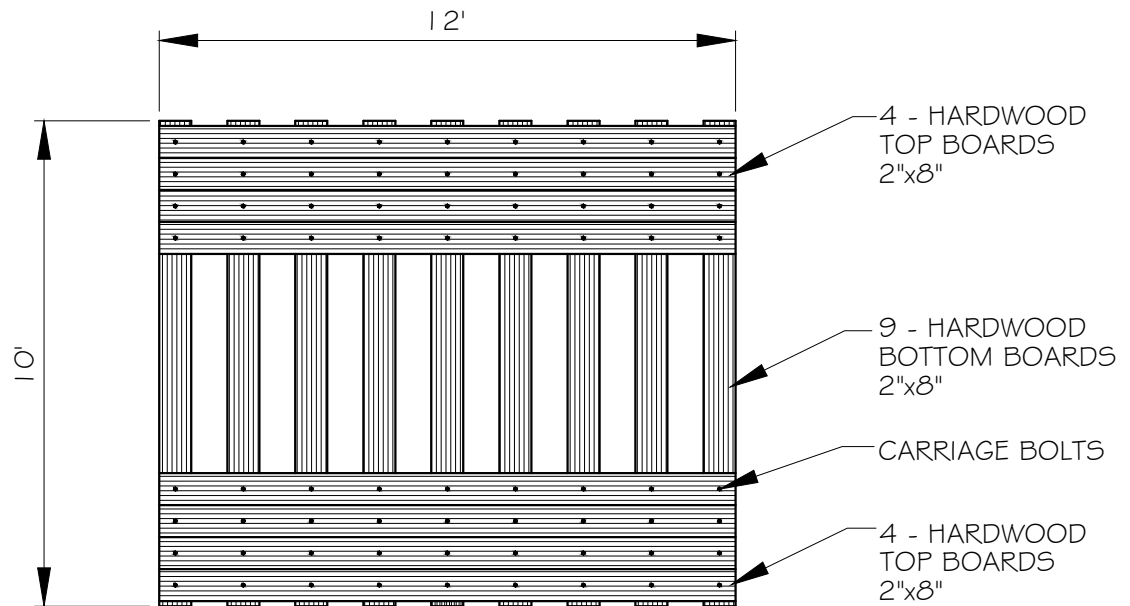
THE SIZE, LOCATION AND FREQUENCY OF STRUCTURE WILL BE BASED ON SITE CONDITIONS AND WILL BE DESIGNED TO MAINTAIN NON-EROSIVE DISCHARGE VELOCITIES.



\* OR OTHER EROSION CONTROL MATTING

## **APPENDIX L**

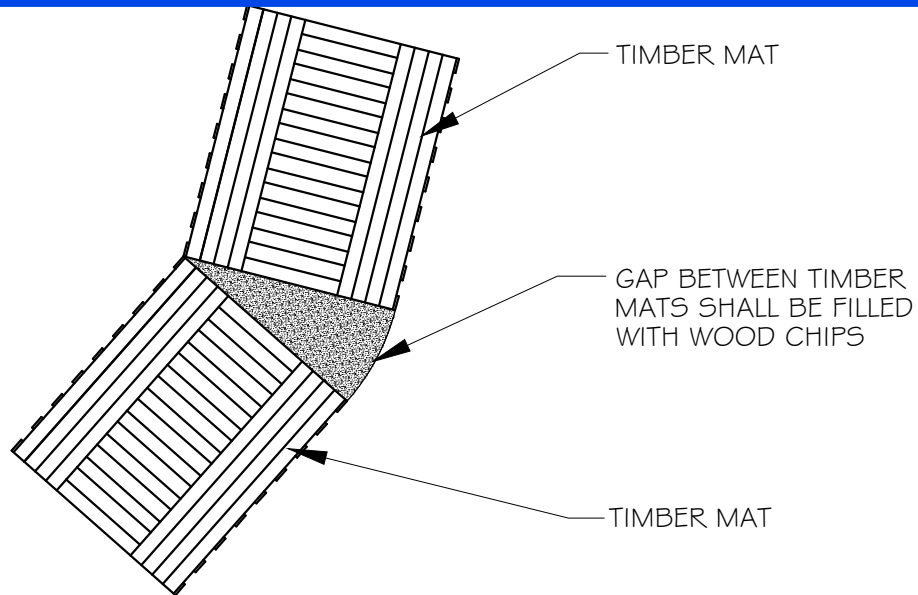
### **Wetland Bank Std. and Spec. - Timber Mat Temporary Access Road (WB-3)**



### TIMBER MAT

NOT TO SCALE

TYPE:	LAMINATED 2 PLY MAT
MATERIAL:	HARDWOOD
APPLICATION:	STRAIGHT ROADS WITH MODERATE TURNS ON SANDY AND MUDDY ROADS
WEIGHT:	1,600 LBS EACH
WEIGHT CAPACITY:	40 TONS



### TIMBER MAT TREATMENT OF ROAD TURNS

NOT TO SCALE



5367 TELEPHONE ROAD,  
WARRENTON, VIRGINIA 20187  
P: 703.393.4844  
WWW.RES.US

WETLAND BANK STD & SPEC 3

### TIMBER MAT CONSTRUCTION ACCESS ROAD

DETAIL WB-3





## **APPENDIX M**

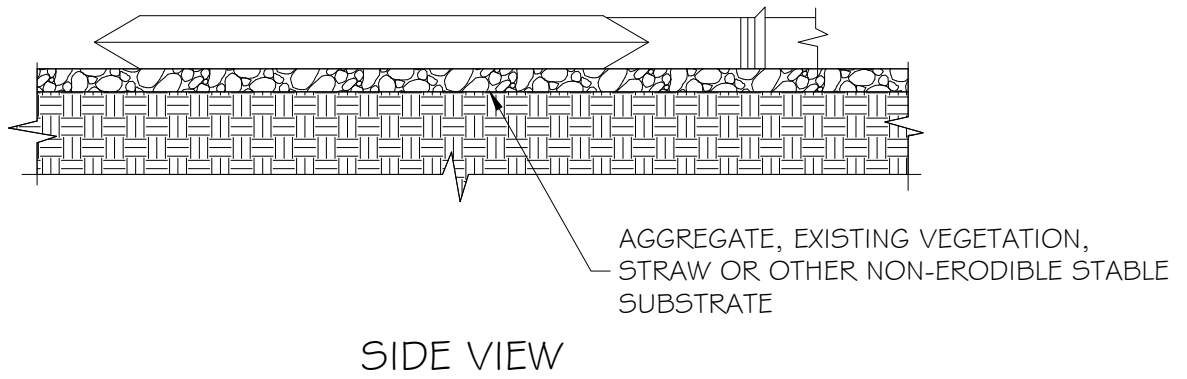
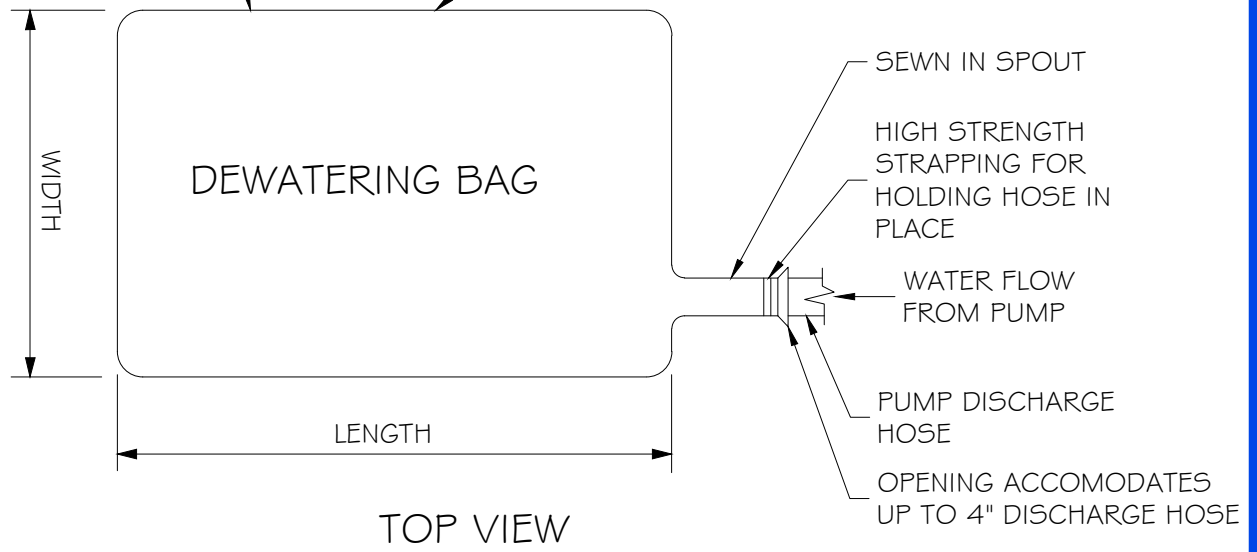
### **Wetland Bank Std. and Spec. - Dewatering Bag (WB-4)**

# DETAIL WB-4: DEWATERING BAG DETAIL

NOT TO SCALE

POLYPROPYLENE NON-WOVEN  
GEOTEXTILE FABRIC BAG WITH  
HIGH STRENGTH DOUBLE  
STITCHED "J" TYPE SEAMS

BAG PLACED ON AGGREGATE,  
EXISTING VEGETATION, STRAW  
OR OTHER NON-ERODIBLE  
SUBSTRATE



NOTE:  
WHEN USING A DEWATERING BAG ON THE  
PERIMETER OF THE SITE, THE BAG SHALL  
BE STRATEGICALLY LOCATED TO MINIMIZE  
IMPACT TO SENSITIVE AREAS.

## **APPENDIX N**

### **Variance Request Form**

## **VARIANCE REQUEST**

**Requested by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Street Address:** \_\_\_\_\_

**City/Town/Zip:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_ **E-Mail Address:** \_\_\_\_\_

**Introduction:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Project Description:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Reason and Justification for Variance Request:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Existing Condition and Adjacent Areas:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Soil Characterization:** \_\_\_\_\_

\_\_\_\_\_

**Critical and Sensitive Areas (Wetlands, Streams, ect.):** \_\_\_\_\_

\_\_\_\_\_

**Mitigation:**

**E&SC Measures:** \_\_\_\_\_

\_\_\_\_\_  
**Permanent Stabilization:** \_\_\_\_\_

\_\_\_\_\_  
**Vegetative Restoration:** \_\_\_\_\_

\_\_\_\_\_  
**Maintenance:** \_\_\_\_\_

\_\_\_\_\_  
**Critical and Sensitive Areas:** \_\_\_\_\_

\_\_\_\_\_

**Self-Inspection, Reporting, and DEQ-Certified Personnel:** \_\_\_\_\_

\_\_\_\_\_

**Signature of Requestor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Requestor Name:** \_\_\_\_\_

**Requestor Title:** \_\_\_\_\_

## **APPENDIX O**

### **Project Notification Information Form**

The following is the information must be submitted to DEQ at least two weeks in advance of the commencement of land-disturbing activities. Notifications shall be sent by email to: [StandardsandSpecs@deg.virginia.gov](mailto:StandardsandSpecs@deg.virginia.gov)

1	Project Name or Number	
2	Project Location (lat/long of access)	(see attached maps)
3	Onsite Construction Manager	
	Contact Information	
4	Responsible Land Disturber (RLD)	
5	Project Description	
6	Disturbed Acreage	
7a.	Estimated Start Date	
7b.	Estimated Completion Date	
8	Project Variances or Exemptions	

## **APPENDIX P**

### **Sample ESC Plan Approval Letter**





5367 Telephone Road  
Warrenton, VA 20187

**Corporate Headquarters**  
6575 West Loop South, Suite 300  
Bellaire, TX 77401  
Main: 713.520.5400

*Date*

Department of Environmental Quality  
ATTN: Hannah Zegler  
PO Box 1105  
Richmond, Virginia 23219

RE: *Project name, County, Virginia*

To Whom It May Concern:

The above referenced plan has been prepared in accordance with Angler Environmental, a RES Company's Annual Standards and Specifications for Erosion and Sediment Control. The Erosion and Sediment Control Plan was prepared by *Preparer & Certification*, and reviewed and approved by *Reviewer and Certification*

Should there be any questions concerning this application, please contact *project contact*

Erica Dudas, Region Stormwater Compliance Manager

Dual Combined Administrator (DCA0435)

edudas@res.us | 540.229.6204